

Investigating Gender Differences in the Reading Motivation Profiles of a Population of
Low-Literate Adult Learners

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Abstract

There is a known gender gap in literacy achievement with females consistently outperforming males on literacy tasks. Research has shown that this gender gap is present among all age groups ranging from school-aged children to adult learners (Statistics Canada & OECD, 2011). However, very little research has focused on literacy development in the adult population. The current research study examined whether or not gender disparities in reading performance and reading motivation were present in a population of adult learners. Participants included 544 individuals enrolled in an adult literacy program. Both quantitative and qualitative indices of reading experience were examined. A regression analysis revealed that several reading performance and motivation factors were significant predictors of gender. In addition, thematic analysis of qualitative interviews revealed several emergent themes, including extrinsic motivation and negative social feedback. Future research is required to examine the influence of motivational factors on adult reading achievement across gender.

Keywords: adult literacy, adults with low literacy, gender differences, reading performance, reading motivation

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Introduction

Prevalence and consequences of low literacy. Low literacy within the adult population is a significant issue of the 21st century and has numerous negative consequences at both the individual and societal levels. Approximately thirty million adults in the United States struggle with daily reading activities (Kutner, Greenberg, Jin, Boyle, Hsu, & Paulsen, 2006). These individuals do not have the literacy skills required to perform basic tasks, such as reading a newspaper article or submitting a job application. Moreover, low literacy acts as a barrier to adequate healthcare. According to results from the 2003 National Assessment of Adult Literacy (NAAL), 36% of adults read at the basic or below basic health literacy levels (Vernon, Trujillo, Rosenbaum, & DeBuono, 2007). Adults who read at this level lack the literacy skills required to decipher medical information on an appointment form or medical pamphlet (Vernon et al., 2007). Low literacy, therefore, contributes to poorer health status (Feinberg, Frijters, Johnson-Lawrence, Greenberg, Nightingale, & Moodie, 2016) and more frequent hospitalizations (Vernon et al., 2007). In addition, poor reading skills are associated with unemployment, crime, homelessness, and substance abuse issues (Merisuo-Storm, 2006). Low literacy, therefore, results in billions of dollars in costs to the economy (Vernon et al., 2007).

Research suggests that children are more likely to develop positive attitudes to reading if they are exposed to a rich reading environment in the home, meaning that they are read to by their parents on a frequent basis and also observe their parents engaged with reading material (Merisuo-Storm, 2006). Low literate adults may be unable to provide their children with a rich reading environment, thereby unintentionally impeding their children's reading development. As a result, low literacy within the adult population

may also negatively impact the children of these adults. Thus, the literacy deficit among the adult population requires increased attention and awareness, as it has both societal and personal implications.

Despite the apparent need for improved literacy skills among the current adult population, the majority of low literate learners who enter an Adult Basic Education (ABE) program fail to achieve the reading skills necessary to participate fully in society (Mellard, Krieshok, Fall, & Woods, 2013). This outcome may be a result of the high rates of absenteeism that are associated with ABE programs (Greenberg et al., 2013). According to Mellard et al. (2013), many adult learners enrolled in ABE programs do not make meaningful literacy gains due to insufficient participation and persistence in these programs.

Research suggests that an individual's level of motivation influences his or her decision to persist in an ABE program (Mellard et al, 2013). Therefore, in order to promote adult learning, understanding the motivational factors that influence an individual's decision to engage in a learning opportunity is important (Gorges & Kandler, 2012). Further insight into the motivation dynamics that may influence adult learners' persistence in these programs is highly important, as increases in attendance and persistence may correlate with increases in reading performance. The existing literature does not fully explore the impact of reading motivation on the reading performance of adult learners. A recent review of the literature pertaining to reading motivation found that only 7% of the total number of research articles published between 2003 and 2013 involved adult participants (Conradi, Jang, & McKenna, 2013). Further investigation of the motivation profiles of adult learners is therefore warranted. This thesis aimed to

examine gender differences across measures of reading motivation and reading performance in a population of low literate adults in order to gain further insight into the unique motivation profiles of this learner population.

Gender differences in reading ability. Past research indicates that gender is an important predictor of reading achievement. A number of research studies have found a gender gap in literacy achievement in favour of females. In fact, the average grade school boy is one and a half years behind the average girl in terms of academic development, regardless of ethnic background or socio-economic status (Marinak & Gambrell, 2010). The Progress in International Reading Literacy Study (PIRLS) reported that on average, fourth grade girls scored ten points higher than boys across 53 different education systems (Thompson et al., 2012). Similarly, results from the 2012 Program for International Student Assessment (PISA) indicated that fifteen-year-old females outperformed fifteen-year-old males on reading tasks across 64 countries (Brozo et al., 2014). This gender disparity in reading performance was substantial, as females performed, on average, 38 PISA points higher than males, which is equivalent to one year of education (OECD, 2013). These results suggest that the gender disparity in reading achievement present in elementary school-aged children persists into the later academic years. Moreover, PISA results indicated that the gender gap in literacy performance widened in 11 countries between 2000 and 2012 (OECD, 2013), demonstrating that boys' disadvantage in reading is a growing concern.

Possibly, this trend may continue in the adult population. The Adult Literacy and Life Skills (ALL) survey produced results consistent with those of PIRLS and PISA. Among participants aged 16 to 65, women outperformed men on prose literacy tasks

across all ages (Statistics Canada & OECD, 2011). Similarly, MacArthur, Konold, Glutting, and Alamprese (2010) investigated gender differences in reading performance in a group of low literate adults and found that women performed significantly better on measures of reading fluency in comparison to men. Despite these findings, very little research has investigated factors that may contribute to the gender difference in literacy performance of adult learners. As a result, the current study sought to examine the relationship between motivation and reading achievement across gender in a population of struggling adult readers.

Defining reading motivation. The term motivation originates from the Latin word, “*motivus*”, which is defined as, “a moving cause” (Ahl, 2006, p. 387). The current literature consists of multiple varying definitions of motivation, however researchers generally conceptualize motivation as an internal construct that evokes behaviour (Ahl, 2006). According to Ryan and Deci (2000), “to be motivated means to be moved to do something” (p. 54). Motivation is therefore conceptualized in the current literature as an internal process that influences an individual’s choice regarding whether or not to engage in a behaviour.

Researchers who study reading motivation are interested in the reasons behind an individual’s decision to engage in a reading activity or opportunity. Conradi, Jang, and McKenna (2013) conducted a review of all of the literature pertaining to reading motivation across a ten-year period. Based on a consensus from these research studies, these authors defined reading motivation as, “the drive to read resulting from a comprehensive set of an individual’s beliefs about, attitudes towards, and goals for reading” (p. 154). Reading motivation is therefore a multi-dimensional construct that

represents an individual's readiness or willingness to engage with a reading task (Schiefele, Schaffner, Moller, & Wigfield, 2012; Wigfield & Guthrie, 1997).

A multitude of research studies have suggested that motivation is an important factor for predicting an individual's learning processes, even more so than other cognitive constructs, such as intelligence and prior knowledge (Schiefele et al., 2012). Reading motivation may therefore play an important role in improving a learner's literacy skills.

Theoretical Framework

Research in the area of adults' reading motivation is limited. However, several studies have examined the influence of various motivation constructs on the reading performance of children and adolescents, which may provide a basis for the analysis of struggling adult readers.

Reading self-efficacy. Two major questions that are directly related to reading motivation include, "Can I be a good reader?" and, "Do I want to be a good reader?" (Wigfield, 1997). The former question relates to self-efficacy, which encompasses ability beliefs and expectations for success. Efficacy expectations influence an individual's decision to engage in an activity, his or her willingness to exert effort into a task, and his or her persistence with that task (Wigfield, 1997). Bandura (1997) differentiated self-efficacy from self-esteem and self-concept, which reflect perceptions of global ability, by defining self-efficacy as relating to an individual's perceptions of his or her ability within a specific domain. Reading self-efficacy therefore relates to how well an individual expects to perform on a reading task (Schiefele et al., 2012). Similarly, Keskin (2014) defines reading self-efficacy as referring to an individual's perceptions of his or her ability to read and comprehend text. In addition, Guthrie and colleagues (2007) included

knowledge of reading strategies in their conceptualization of reading self-efficacy. Researchers therefore agree that reading self-efficacy relates to an individual's perceptions of his or her ability to implement reading strategies and perform reading tasks.

Self-efficacy and reading performance. Self-efficacy has been linked consistently with literacy achievement. Those persons with high efficacy beliefs perform better on reading tasks in comparison to those with lower efficacy perceptions (Park, 2011). Research shows that self-efficacious individuals believe they have control over their academic achievement, which encourages success, whereas students with low self-efficacy engage in passive failure and learned helplessness (Heron, 2003). Similarly, research also indicates that individuals with positive efficacy perceptions persist with difficult tasks whereas individuals with negative efficacy perceptions are more likely to avoid these tasks (Logan, Medford, & Hughes, 2011; Zimmerman, 2000). Self-efficacy may also influence an individual's emotional reactions towards a task. According to Zimmerman (2000), self-efficacious students experience fewer negative emotions when faced with a challenging task. Reading self-efficacy may therefore be linked with an individual's affect during reading tasks. Overall, research findings indicate that higher levels of self-efficacy are related to increased performance and persistence with academic tasks, as well as more positive affect.

Intrinsic and extrinsic reading motivation. Although research has shown that efficacy expectations influence reading performance outcomes, these factors alone are not enough to produce reading engagement (Wigfield, 1997). These data are in accordance with findings from a review conducted by Schiefele et al. (2012), which concluded that

self-efficacy is an antecedent of reading motivation, rather than a genuine reading motivation construct. In order to engage in an activity, an individual must have an incentive to do so, such as an inherent interest in the activity (Wigfield, 1997; Wigfield & Guthrie, 1997). Therefore, the second question posed by Wigfield (1997) (i.e., “Do I want to be a good reader?”) relates to subjective reasons for engaging in a reading activity.

Two major motivation constructs are related to an individual’s decision to read; intrinsic and extrinsic reading motivation. Intrinsic reading motivation reflects the decision to read for internal purposes, such as an inherent interest, whereas extrinsic motivation reflects the decision to read for external purposes, such as a reward or some separable outcome (Conradi et al., 2013). In other words, intrinsic motivation represents subjective reasons to read that are internal to the act of reading, whereas extrinsic reading motivation represents subjective reasons to read that are external to the act of reading (Schaffner, Schiefele, & Ulferts, 2013). An individual who is intrinsically motivated may decide to read because he or she enjoys the activity of reading in and of itself or is interested in a certain subject domain, whereas an individual who is extrinsically motivated may decide to read due to pressure from parents or to receive recognition from others. A common theoretical theme throughout the literature is the distinction between these two opposing motivation constructs.

Multi-dimensional theories of reading performance. Various motivation theories are proposed to explain individual differences in reading performance. As mentioned previously, research indicates that motivation is multidimensional, consisting of several interacting variables. Therefore, theoretical models of motivation must also include multiple dimensions (Park, 2011). For example, Eccles and Wigfield (2002)

conceptualized motivation by organizing constructs into two higher order categories, including competency beliefs and values. Marsh, Craven, Hinkley, and Debus (2003) also found that motivation constructs could be explained by a two-factor theory, in which motivation variables were separated into one of two higher-order constructs; learning orientation and performance orientation. Self-Determination Theory (SDT) is also multidimensional and distinguishes between types of motivation constructs by considering individual reasons for engaging in a particular activity. SDT states that intrinsic and extrinsic motivation represent the most basic distinction between constructs (Ryan & Deci, 2000). According to a recent review, SDT is the most frequently referenced theoretical framework within the current motivation literature (Conradi et al., 2013). Schiefele et al. (2012) also conducted a literature review of the research pertaining to reading motivation and found that subjective reasons for reading can often be divided into one of two major forms of motivation; intrinsic and extrinsic motivation. These authors suggest that intrinsic and extrinsic motivation represent genuine reading motivation constructs. In concurrence, Conradi et al. (2013) included intrinsic and extrinsic motivation in their definition of reading motivation, which was based on a consensus of 92 empirical studies. Wigfield and Guthrie (1997) state that intrinsic and extrinsic motivation are crucial to determining an individual's overall level of reading motivation. Therefore, an apparent agreement exists among researchers that intrinsic and extrinsic motivations reflect individual differences in incentives or reasons for reading, and that these motivation constructs play an important role in determining an individual's overall level of reading motivation.

Intrinsic/extrinsic motivation and reading performance. Research suggests

that intrinsic and extrinsic motivation should be considered as two separate motivation constructs, rather than as a continuum (Park, 2011). In other words, an individual may simultaneously express different levels of intrinsic and extrinsic reading motivation. That being said, a consensus within the current literature is that intrinsic motivation is a stronger predictor of literacy achievement in comparison to extrinsic motivation (Wigfield & Guthrie, 1997). According to Ryan and Deci (2000), intrinsic motivation is essential for high-quality learning. Past research investigating the relationship between motivation and reading achievement has found that intrinsic motivation positively predicts reading performance, whereas extrinsic motivation negatively predicts reading performance (Becker et al., 2010; Schaffner et al., 2013; Schiefele et al., 2012; Wange & Guthrie, 2004). Furthermore, research indicates that while reading amount mediates the relationship between intrinsic motivation and reading achievement, extrinsic motivation exerts a direct negative effect on reading performance (Becker et al., 2010; Schaffner, Schiefel, and Ulferts, 2013). These results suggest that students who read in order to achieve an external outcome, such as a social reward, perform poorly on comprehension tasks in comparison to students who read for enjoyment or interest.

Numerous theories are offered for why extrinsic motivation is negatively correlated with reading performance. These include that extrinsically motivated individuals engage with reading materials only when required to do so, use surface-level reading strategies (e.g., memorization), and are less focused when reading, which negatively impacts their comprehension abilities (Becker et al., 2010; Wang & Guthrie, 2004). Overall, many reading motivation researchers agree that intrinsically motivated individuals perform better on reading tasks than those who are extrinsically motivated.

Intrinsic/extrinsic motivation and reading behaviour. Research also suggests that the effects of intrinsic and extrinsic motivation are mediated by patterns of reading behaviour. This is significant, because reading amount has been shown to contribute to reading comprehension (Wang & Guthrie, 2004). For example, Mellard, Patterson, and Prewett (2007) examined the relationship between reading behaviours and reading achievement among a population of low literate adults and found that those who reported that they did not engage in reading practices performed the lowest on measures of reading ability. This result suggests that reading behaviours are important indicators of reading achievement.

A number of research studies have found a positive relationship between intrinsic motivation and reading behaviour. Intrinsically motivated learners engage with reading material more often and read a wider range of text in comparison to those who are extrinsically motivated (Park, 2011). Schiefele et al. (2012) found that intrinsic motivation was a better predictor of reading amount than extrinsic motivation, even after controlling for variables such as prior knowledge, prior reading achievement, reading efficacy, and extrinsic motivation. Similarly, Wigfield and Guthrie (1997) found a positive relationship between intrinsic motivation and reading amount, with students who reported the highest levels of intrinsic motivation reading significantly more often than those with lower levels of intrinsic motivation. In a later study, Wang and Guthrie (2004) found that students' level of intrinsic motivation predicted the amount of reading they engaged in for enjoyment. Interestingly, this correlation was stronger when controlling for extrinsic motivation.

Research findings indicate that reading amount may mediate the relationship

between intrinsic motivation and reading performance. For example, Becker et al. (2010) found that reading amount mediated the positive relationship between levels of intrinsic reading motivation reported in grade four and reading achievement in grade six. Schaffner, Schiefele, and Ulferts (2013), also found that reading amount mediated the relationship between motivation and reading performance, with intrinsic motivation having a significant positive indirect effect on comprehension scores, and extrinsic motivation having a significant negative indirect effect on comprehension scores. These findings suggest that intrinsically motivated individuals read more frequently than those who are extrinsically motivated, which may subsequently influence their reading performance.

Ultimately, the research indicates that children with high levels of intrinsic reading motivation perform better on reading tasks and read more frequently than children with low levels of intrinsic motivation. In addition, extrinsic motivation is associated with lower performance on reading tasks and lower levels of reading engagement. It is therefore important to determine factors that contribute to an individual's level of intrinsic motivation. Moreover, educators and researchers must consider these factors when designing reading programs. The relationship between intrinsic motivation and reading achievement in populations of adult learners is understudied. As a result, it cannot be determined that intrinsic reading motivation positively influences adult learners' reading performance. The current study aimed to gain insight into the relationship between indices of reading motivation (e.g., intrinsic motivation) and reading performance across gender in a population of struggling adult readers.

Theoretical focus of the current study. The two questions presented by Wigfield (1997) capture different motivation constructs (i.e., self-efficacy and the distinction between intrinsic and extrinsic motivation), and were used as the theoretical focus for the present study. As discussed previously, research has shown that intrinsic motivation is more positively associated with literacy achievement in comparison to extrinsic motivation. Therefore, intrinsic motivation was the primary focus of analysis when examining gender differences in the relationship between reading motivation and literacy achievement. Although a consensus is reported in the literature that self-efficacy is a precondition rather than a genuine construct of reading motivation, it is still an important variable to consider, as research has shown that expectancy perceptions and intrinsic motivation are interrelated. High levels of accomplishment expectancy beliefs must be experienced in order for an individual to be intrinsically motivated in an activity (Ryan & Deci, 2000). In other words, individuals perceive an activity as intrinsically motivating only when they feel competent in the activity (Eccles & Wigfield, 2002). Research therefore indicates that self-efficacy and intrinsic motivation are interrelated constructs, and this relationship was further examined in the current study.

Defining Motivation Constructs

Many terms related to motivation constructs are used without distinction, making comparisons difficult across studies. Therefore, the present study includes a description of each construct based on consensus reviews of the motivation literature, and a description of how these overlapping constructs were analyzed. In particular, the terms reading attitude, interest, and intrinsic motivation are often used interchangeably in the current literature (Conradi et al., 2013).

Reading attitude. A review of the current literature on reading motivation concluded that reading attitude is defined as, “a set of acquired feelings about reading that consistently predispose an individual to engage in or avoid reading” (Conradi et al., 2013, p.154). Similar to the conceptualization of intrinsic reading motivation, reading attitude is related to an individual’s decision to engage with a reading activity. Schiefele et al. (2012) argue that reading attitude should be considered a genuine reading motivation construct (along with intrinsic and extrinsic motivation) rather than a distinct construct due to its strong conceptual overlap with intrinsic reading motivation. Research has shown that positive attitudes contribute to intrinsic motivation, whereas negative attitudes inhibit intrinsic motivation, suggesting that these constructs are strongly related (McKenna, Conradi, Lawrence, Jang & Meyer, 2012). Many researchers therefore agree that reading attitude and intrinsic motivation are interrelated constructs.

In addition, research indicates that reading attitude and intrinsic motivation relate similarly to reading performance outcomes. Logan and Johnston (2009) found that positive attitudes to reading were associated with higher reading ability among elementary school-aged children. A study by Lawes (2009) examined the role of reading engagement, which was defined as an attitudinal factor relating to reading enjoyment and practices, in the relationship between gender and literacy skill in a population of adult learners. Results indicated that the gender discrepancy in literacy skills diminished when reading engagement was controlled. This suggests that differences in reading attitude may contribute to the gender gap in reading performance among adult learners. However, future research is required to examine the direct influence of reading attitude on reading performance of those enrolled in ABE programs. A number of research studies have

shown that positive reading attitude and high levels of intrinsic reading motivation are both linked to improved reading performance in children. The literature pertaining to the relationship between reading attitude and achievement in populations of adults is limited. However, the study by Lawes (2009) indicates that attitudes may play a role in the relationship between reading performance and gender in the adult population, warranting further research in this area.

Reading interest and enjoyment. Reading interest and enjoyment are other terms in the motivation literature that are used interchangeably with intrinsic reading motivation. Conradi et al. (2013) defined reading interest as, “a positive orientation toward reading about a particular topic” (Conradi et al., 2013, p. 154). According to Wigfield (1997), an individual’s level of interest highly relates to his or her level of intrinsic motivation. In fact, Hidi (2000) states that an individual must experience high levels of interest in order to be intrinsically motivated in a learning task. Furthermore, Schiefele et al. (2012) suggest that reading for interest is a component of intrinsic motivation. Therefore, several researchers agree that interest/enjoyment and intrinsic motivation are conceptually similar constructs.

Reading interest has been consistently associated with reading engagement and performance (Ainley, Hillman, & Hidi, 2002). According to Bye, Pushkar, and Conway (2007), interest and intrinsic motivation produce similar outcomes, as they are both related to increased engagement with task content. Learners who rate a text as interesting are more likely to persist with reading and to comprehend more of the material than those who do not report high interest levels (Oakhill & Petrides, 2007). Similarly, Wang and Guthrie (2004) state that when individuals report interest in a story, they are more

concentrated on the elements of the story, and as a result, are more likely to perform better on comprehension tasks in comparison to individuals who are less interested in the story. In addition, PISA results displayed that students who report high levels of reading enjoyment perform significantly better than students who report low levels of reading enjoyment across all countries (OECD, 2010). Minimal research has investigated the relationship between reading enjoyment and reading development in populations of adult learners. A study by Duncan (2009) administered semi-structured qualitative interviews with participants enrolled in an adult literacy program, and found that when asked how they improve their reading skills, 16 out of the total 37 learners described reading enjoyable books as a form of motivation for practicing and improving their literacy abilities. This finding suggests that reading enjoyment may be an important component of adult learners' overall reading motivation and persistence with reading materials.

Due to the fact that measures of reading attitudes and reading interest/enjoyment are conceptually similar to measures of intrinsic reading motivation, the current study considered these variables to represent one genuine reading motivation construct, rather than distinct constructs. As a result, research findings related to attitudes and interest/enjoyment were used to support the influence of intrinsic reading motivation on literacy achievement.

Gender Differences in Reading Motivation

Self-efficacy and reading performance. A limited number of studies have investigated gender differences in the relationship between self-efficacy and reading performance. One study by Lynch (2002) administered a questionnaire to 66 elementary school students, which involved answering several questions relating to their reader self-

perceptions. The questions were divided into four categories, including social feedback, physiological states, observational comparison, and progress. Results indicated that both boys and girls displayed a significant association between perceptions of their reading progress and performance on a reading test. However, girls reported receiving significantly more positive social feedback, which included feedback from teachers, peers, and parents, in comparison to boys. This is an interesting finding, as it indicates that social feedback may play a significant role in the self-efficacy perceptions of school-aged children, and may contribute to gender discrepancies in efficacy beliefs and reading performance.

A study by Coddington and Guthrie (2009) conducted multiple regression analyses and found that when reading orientation was controlled, boys' reported levels of efficacy perceptions were statistically significant predictors of their scores on the Woodcock-Johnson Word-Identification subtest, whereas girls' efficacy perceptions did not contribute significantly to their word identification scores. Similarly, Logan et al. (2011) found that the association between competency beliefs and reading ability was significantly stronger for boys than for girls. These results suggest that boys' perceptions of their reading abilities are strongly associated with their reading performance, whereas this relationship is weaker for girls. Perhaps boys need to perceive themselves as good readers in order to put effort into a reading task and perform well, whereas girls do not (Logan et al., 2011). Alternatively, boys' may need to perform well on a reading test in order to feel that they are good readers.

Research suggests that the difference in relationship between expectancy perceptions and reading performance may be a result of gender stereotypes. Meece,

Glienke, and Burg (2006) found that girls' and boys' efficacy beliefs aligned with gender stereotypes, as boys displayed stronger competency and value perceptions in masculinized subject domains, such as math and science, whereas girls expressed stronger competency in language arts. In addition, PISA results found that the gender gap in reading performance and reading interest was wider in some countries versus others, and that these discrepancies were due to differences in reading attitudes and behaviours related to gender (OECD, 2010). This difference suggests that the gender disparity in reading performance may be a result of social biases that shape gender norms. This hypothesis aligns with a sociohistorical theory of agency, which claims that individuals' values are constrained by social dynamics (Heron, 2003). Moreover, Williams, Burden, & Lanvers (2002) conducted qualitative interviews and found that several participants reported that it was "not cool" for boys to enjoy language arts, and that it was not considered appropriate for boys to express an interest in this domain. The results of these studies suggest that the gender difference in literacy performance may be due to gender biases that shape perceptions of reading self-efficacy.

Overall, research indicates that boys report lower levels of reading self-efficacy than girls, and their efficacy beliefs significantly influence how well they perform on reading tasks. Girls on the other hand report higher levels of reading self-efficacy, and their efficacy beliefs are not as strongly related to their reading achievement. Interestingly, the gender difference in competency perceptions narrows over time for math, but increases for language arts (Meece et al., 2006). This finding suggests that the gender discrepancy in reading self-efficacy present in elementary school-aged children may persist into adulthood. However, the literature on the relationship between self-

efficacy and academic achievement in the adult population is sparse. Therefore, further research is required to determine the influence of self-efficacy on the reading performance of male and female adult learners.

A limited number of studies have examined the influence of self-efficacy on academic engagement and achievement in populations of adult learners. One study by Lim (2001) examined self-efficacy reported by adult learners enrolled in a Web-based education program. Results indicated a statistically significant relationship between computer self-efficacy and program satisfaction as well as the intent to participate in future Web-based programs. This finding suggests that adults' reported levels of academic self-efficacy may influence their engagement and participation in ABE programs. Zajacova, Lynch, and Espenshade (2005) investigated the effects of self-efficacy on various academic outcomes across 107 students enrolled in their first year of secondary education. Results revealed that self-efficacy had a strong positive effect on academic achievement (i.e., GPA and number of credits completed). These results indicate that perceptions of academic self-efficacy may influence continued participation in education programs as well as academic success in populations of adult learners. However, further research is required to investigate the role of self-efficacy on adults' literacy performance in particular. The current study examined the relationship between self-efficacy and reading performance across biological sex in a population of adult learners with demonstrated reading difficulties.

Intrinsic motivation and reading performance. Research has also shown a gender disparity in reported levels of intrinsic reading motivation. McKenna et al. (2012) found that girls reported more positive attitudes towards academic and recreational

reading in comparison to boys. Similarly, Logan and Johnston (2009) found that girls reported more positive attitudes towards reading, even after controlling for literacy ability. This finding suggests that a gender disparity in positive attitude to reading is present regardless of a student's past performance on reading tasks.

According to Merisuo-Strom (2006), girls report higher levels of reading enjoyment than boys. A study involving grade ten students found that girls were more likely to persist with lower interest texts, whereas boys were more likely to disengage from these texts (Ainley et al., 2002). Similarly, Williams, Burden, and Lanvers (2002) conducted qualitative interviews with secondary school students and found that both male and female participants reported that girls were more likely to put effort into tedious work, and that boys needed to enjoy a task in order to put effort into it.

Gender differences also exist in the relationship between intrinsic motivation and reading performance. For example, Logan et al. (2011) found that boys' intrinsic reading motivation was significantly associated with their level of reading ability, whereas this association was non-significant for girls. Similarly, Logan and Johnston (2009) found a significant association between reading attitudes and reading ability among boys, but not girls. These findings suggest that boys' level of intrinsic reading motivation effects their reading performance, whereas this association is not the case for girls. Although girls report more positive attitudes to reading than boys, their attitudes do not impact how well they perform on reading tasks.

Similar findings have been reported on the relationship between interest/enjoyment and reading performance. For example, Ainley et al. (2002) found that the gender discrepancy in reading performance diminished when literacy tasks consisted

of high interest materials. This suggests that when boys report high interest in test materials, their reading performance is equal to that of girls. A similar finding was reported in a study by Oakhill and Petrides (2007), in which the gender gap in reading comprehension among ten and eleven year olds was substantially reduced when boys were tested on a high preference text versus a low preference text. In other words, boys performed better on reading tests that involved a preferred text versus a non-preferred text, whereas girls performed equally well regardless of their expressed interest in the reading material (Oakhill & Petrides, 2007). In addition, Brozo et al. (2014) analyzed PISA results and found that if boys had the same level of reading enjoyment as girls, the gender discrepancy in reading performance would be reduced to almost zero. These findings suggest that boys' level of reading interest and enjoyment influence their performance on literacy tasks, whereas girls' level of interest and enjoyment does not influence their performance. In other words, girls are able to perform equally well on a reading task regardless of whether or not they are interested in or enjoy the task. Intrinsic motivation may therefore be of particular importance to boys' reading achievement.

In summary, research that involves school-aged children indicates that the relationship between intrinsic reading motivation and reading performance differs across biological sex, with girls reporting higher levels of intrinsic motivation, and boys' level of intrinsic motivation having a greater impact on their literacy achievement in comparison to girls'. Perhaps these findings indicate that boys require additional incentive, such as interest in the reading material, in order to perform well on literacy tasks (Oakhill & Petrides, 2007). Results from PISA 2009 suggest that the gender disparity in reading performance would be reduced by 14 points if boys reported the same

level of positive attitudes towards reading as girls (OECD, 2010). In other words, the gender gap in literacy ability has the potential to be reduced if boys expressed a higher level of intrinsic reading motivation. The current research study investigated whether or not the gender disparity found in the relationship between intrinsic reading motivation and reading performance among children was also present in a population of struggling adult readers.

Negative affect and reading performance. Some researchers have investigated the effects of internal feelings on reading performance. According to Gorges and Kandler (2012), emotions are related to learning motivation and academic achievement. A study by Lynch (2002) investigated gender differences in affect related to reading tasks, and found that girls reported significantly more positive internal feelings when engaged with a reading task in comparison to boys.

Research also indicates that negative emotions are related to higher levels of perceived difficulty. For example, a study by Acee et al. (2010) assessed college students' reported levels of boredom across tasks perceived to be under-challenging and over-challenging. Results indicated that significantly higher levels of self-focused boredom, which included feelings of dissatisfaction and frustration, were reported when students recalled over-challenging tasks in comparison to under-challenging tasks. In addition, measures of boredom were significantly correlated with measures of negative emotions (i.e., anxiety, hopelessness, and shame) only in situations that were perceived as over-challenging versus under-challenging. These results indicate that tasks perceived as being more difficult are associated with self-focused boredom as well as other negative emotions, suggesting a link between perceptions of difficulty and negative affect.

Research has shown that perceptions of difficulty influence achievement outcomes. According to Wigfield and Eccles (2000), perceived difficulty impacts expectancies of success as well as task value beliefs, which subsequently influence performance outcomes. A study by Li, Lee, and Solmon (2007) examined the influence of perceived difficulty on grade eight students' performance on a physical education task. Results demonstrated that students who reported higher levels of perceived difficulty received lower performance scores than those who reported lower levels of perceived difficulty. In addition, Fulmer et al. (2013) found that students who perceived a reading task as more difficult made more errors while reading than those students who perceived the task as less difficult. Research therefore indicates a link between perceptions of task difficulty and performance outcomes, with increased levels of perceived difficulty predicting lower test scores.

Eccles and Wigfield (2000) state that affective memories are preconditions of expectancy perceptions. However, Gorges and Kandler (2012) found that negative affective memories were directly associated with learning motivation, rather than antecedents of current expectancy perceptions. This finding may indicate that emotions experienced during a reading task are directly linked with reading self-efficacy. Although few research studies have examined the impact of emotions on reading performance, some support suggests that negative affect is associated with increased levels of perceived difficulty and lower scores on reading tests. Current evidence is not sufficient to determine whether emotions directly affect reading performance, or whether they act as preconditions for perceptions of efficacy and perceived difficulty. The present study

examined the relationship between adult learners' reported levels of perceived difficulty and negative affect and reading performance across gender.

Current Study

Rationale. Research has shown that intrinsic reading motivation and efficacy beliefs decline as children progress throughout the elementary school years (Park, 2011; Ryan & Deci, 2000; Wigfield, 1997). In addition, McKenna et al. (2012) found that attitudes towards reading worsen from 6th to 8th grade. Furthermore, evidence suggests that the gender gap in reading performance persists in the adult population. For example, MacArthur et al. (2010) compared reading components across demographic variables in a population of low literate adult learners and found that women performed significantly better on reading fluency measures than men. In a subsequent study, MacArthur, Konold, Glutting, and Alamprese (2012) implemented a cluster analysis of five reading factors (i.e., decoding, word recognition, spelling, fluency, and comprehension) in order to determine subgroups of adult learners. Results indicated that men were overrepresented in subgroups with lower word skills. In addition, results of the ALL survey indicated that women outperformed men on prose literacy tasks across all age groups (i.e., 16 to 65-years-old) (Satherley & Lawes, 2008). These findings suggest that gender discrepancies in reading performance may exist in populations of low literate adults, warranting further investigation into the relationship between reading skills and gender in similar populations of learners. Moreover, Lawes (2009) analyzed the ALL survey data and found that when reading engagement, which was defined as a measurement of reading enjoyment and reading behaviour, was controlled, gender differences in reading performance became statistically non-significant. This finding suggests that attitudes and

behaviours related to reading may contribute to the gender gap in reading performance among adult learners. Further research investigating the motivational factors that may influence adult learners' reading development is therefore warranted.

Despite these findings, very little research has investigated the relationship between reading motivation and literacy performance in the adult population. As a result, current researchers and practitioners in the field of adult literacy education are forced to rely on findings from the literature on children's reading development and motivation (Mellard, 2010). Due to the apparent developmental and experiential differences between populations of school-aged learners and adult learners, research based on children's reading achievement may or may not be applicable to a population of low-literate adults (Mellard, 2010). In addition, an insufficient amount of research exists in the field of adult literacy to accurately assess the effectiveness of reading interventions in this learner population (MacArthur et al., 2010). Therefore, research investigating the relationship between motivation and reading performance in the adult population is warranted.

Research also indicates that students who struggle academically report lower levels of interest, more negative efficacy perceptions, and less persistence with academic tasks (Park, 2011). A study by Logan et al. (2011) found that intrinsic motivation accounted for more of the variance in reading ability among poor readers in comparison to those labeled as good readers. This finding suggests that intrinsic motivation is an important factor in developing literacy ability among struggling readers in particular, and may therefore be of relevance to the current population of low literate adults.

The current study aimed to investigate the relationship between reading motivation and reading performance among a population of struggling adult readers.

Specifically, the study examined whether or not the gender differences in motivation and reading performance present in school-aged children were also present in a population of adult learners. This issue is socially significant because literacy achievement is a strong predictor of economic and social success (OECD, 2010). In addition, a better understanding of the unique motivation profiles of men and women will support researchers and educators in their effort to promote adult learning, narrow the gender gap in reading achievement and, ultimately, assist in decreasing the prevalence of low literacy in North America. An apparent crucial challenge is that researchers and educators focus on the reading skills of adult learners with a view towards equalizing the gender differences in abilities.

Method

Participants. Participants included 544 individuals enrolled in ABE programs in the Atlanta and Toronto areas that had partnered with the Centre for the Study of Adult Literacy (CSAL). Adult learners enroll in ABE programs due to a variety of personal goals, which include receiving their General Educational Development (GED) diploma, obtaining employment, reading to their children, and helping their children with homework. Participants were aged 16 years and older, read below a grade 9 level, spoke proficient English, and demonstrated adequate hearing and vision.

Demographics. Participants were administered a demographics questionnaire consisting of 72 items. The questionnaire included items related to age, gender, language status, race, and educational history. The questionnaire was structured in such a way that some items could be skipped depending on participant responses on the previous item.

Procedure. Members of the CSAL research team approached participants in their classrooms and delivered an introduction to the research study. Those interested in participating in the study were recruited based on their performance on the Test of Adult Basic Education (TABE-R; CTB/McGraw-Hill, 1996). Individuals who scored between grade levels 3.0 and 8.0 were recruited. Once written consent was obtained, participants completed four to six hours of one-on-one testing with a member of the CSAL research team. Research assistants responsible for administering the tests were trained by either a registered psychologist or a member of the research team who had extensive experience in the field. The testing involved 37 tasks, including various reading measures and motivation questionnaires. This process took place over several days, depending on the participant's availability. Multiple levels of reliability were involved to ensure participant scores were recorded accurately. Participant responses were recorded by examiners on a custom-designed data entry sheet, which was then shipped to the Texas Institute for Measurement Evaluation and Statistics for data processing. Prior to shipping, responses were double checked by at least one other tester. Numerous post-processing error checks and cross-references we also implemented (e.g., checking standardized basal and ceiling rule implementation from the scanned item responses, etc.). Upon completion of the testing, participants were asked to answer two semi-structured interview questions concerning a positive and negative experience they had with reading. The qualitative interviews were conducted individually with a research assistant and were audio recorded for later analysis. Participants were offered a compensation of \$10.25 per hour of testing.

Reading performance measures. Individuals who read between a third and eighth grade level have only acquired lower-level reading capabilities. As a result, the

current study focused on participant scores on lower-level reading tasks, which include phonological, morphological, decoding, irregular word reading, vocabulary knowledge, and fluency skills. Specifically, the following reading assessments were analyzed in regards to their relationship with various motivation constructs: the Test of Silent Word Reading Fluency (TOSWRF; Mather, Hammill, Allen, & Roberts, 2004), the Test of Silent Contextual Reading Fluency (TOSCRF; Hammil, Wiederholt, & Allen, 2006), the sight word reading efficiency and phonemic decoding efficiency subtests of the Test of Word Reading Efficiency (TOWRE; Torgesen & Wagner, 1999), and finally, the Reading Fluency, Letter-Word Identification, and Work Attack subtests of the Woodcock-Johnson III NU Test of Cognitive Abilities and Tests of Achievement (WJIII; Woodcock, McGrew, & Mather, 2011). These reading measures represent a portion of the total reading measures included in the larger CSAL study, and were chosen as a representative sample of decoding and fluency measures. According to Archer, Gleason, and Vachon (2003), decoding and fluency skills represent the foundation for higher-order reading skills, such as passage comprehension.

Defining decoding skills. Decoding is an essential prerequisite skill for reading, and involves the application of letter-sound rules in order to translate written text into language, and to read isolated words both accurately and efficiently (Gough, 1986). Archer, Gleason, and Vachon (2003) state that decoding reflects phonological awareness skills, such as syllable blending and segmentation, and letter-sound identification. Similarly, a study by Compton (2000) found that phonological processing contributed to students' overall decoding ability. Furthermore, research indicates that those who display poor decoding skills are more likely to disregard portions of letter-sound information,

omit syllables, and mispronounce portions of words (i.e., affixes) in comparison to those with proficient decoding skills (Archer, Gleason, & Vachon, 2003). Therefore, there is concurrence in the current literature that decoding reflects the ability to identify letter-sound information and other phonological processes in order to read words.

Defining fluency skills. Fluency reflects the rate and accuracy of word reading ability (Archer et al., 2003). Reading fluency is often described as the automaticity of reading processes (Wolf & Katzner-Cohen, 2001). LaBerge and Samuels (1974) define automaticity as the ability to complete a skill or subskill while attention is directed elsewhere. Therefore, a fluent reader is one who can direct his or her attention towards higher-order skills, such as comprehension of the reading material, rather than on lower-level processes (e.g., decoding). In addition, some authors include the ability to read with expression in their criteria for reading fluency (Hudson, Mercer, & Lange, 2000). Reading fluency therefore reflects a level of speed, accuracy, and automaticity with reading tasks, as well as the use of expression while reading.

Reading achievement measures. The TOSWRF is a measure of reading fluency, and requires individuals to identify meaningful words among rows of random words with no spaces. The TOSCRF is a similar test, however the rows of words consist of meaningful sentences. Both tests are time constrained and require the participant to draw lines to separate meaningful words. The TOWRE is a measure of reading accuracy and fluency, and involves two subscales. The sight word efficiency subscale measures an individual's ability to recognize/pronounce printed text, whereas the phonemic decoding efficiency subscale measures an individual's ability to decode words both accurately and fluently. Several subtests of the WJ III were assessed. The word attack subtest measures

an individual's ability to use phonetic skills in order to pronounce unfamiliar words, the reading fluency subtest measures connected text fluency during 1-min intervals, and finally, the word-identification subtest involves sight-word reading skills, which is a measure of reading vocabulary (Mellard, Fall, & Woods, 2010).

Reading motivation measures. The following psychometric assessment tools were used to measure motivation: The Intrinsic Motivation Inventory (IMI; Ryan, 1982), the Reading Motivation Scale (RMS; Guthrie & Wigfield, 2009), and the Reading Patterns Survey, developed for the purpose of the present larger study. The IMI is a self-report measure that requires the participant to respond to various statements on a five point Likert-type scale. This inventory measures four motivation constructs, which include interest/enjoyment, sense of competence, perceived effort, and pressure/tension. The current study examined participant scores on the pressure/tension subscale. This motivation construct reflects an individual's affect when reading and is measured by participant responses to statements such as, "I feel nervous when I read" and "I feel pressure when I have to read." The higher a participant scores on this subtest, the more negative emotions he or she reports experiencing during reading activities. The current study also examined participant scores on the interest/enjoyment subscale. This motivation construct reflects the level of enjoyment and interest an individual reports experiencing during a reading task, and is measured by participant responses to statements such as, "I like reading" and "I read for fun." The higher a participant scores on this subtest, the higher his or her reported level of enjoyment and interest in reading. Reliability analysis concluded that the interest/enjoyment subtest of the IMI and the pressure/tension subtest of the IMI had relatively high reliability values, Cronbach's $\alpha =$

.92 and Cronbach's $\alpha = .75$, respectively. Cronbach's α values between .7 and .8 indicate good reliability (Field, 2013).

The RMS is another self-report measure that incorporates items relating to four reading motivation constructs, including intrinsic motivation, perceived difficulty, self-efficacy, and avoidance. The current study focused on the intrinsic motivation, self-efficacy, and perceived difficulty subscales. Each subscale involves a series of statements that require the participant to respond on a four point Likert-type scale. The intrinsic motivation subscale involves questions that pertain to an individual's inherent interest in reading (e.g., "Do you enjoy reading in your spare time?" and "Do you like to read new books?"). The higher a participant scores on this subtest, the more intrinsically motivated he or she is to engage in reading activities. The self-efficacy subscale involves questions concerning an individual's perceptions of him or herself as a reader (e.g., "Can you figure out hard words when reading?" and "Do you think you will do well in reading next year?"). The higher a participant scores on this subscale, the more successful he or she feels about reading tasks. The perceived difficulty subscale requires the participant to respond to questions pertaining to how difficult he or she perceives reading tasks to be in general (e.g., "Do you make lots of mistakes when reading?" and "Is reading to other people a challenge for you?"). The higher a participant scores on this subscale, the more challenging he or she perceives reading tasks to be. Reliability analysis indicated that the intrinsic motivation and perceived difficulty subtests of the RMS had high reliability values, Cronbach's $\alpha = .83$ and Cronbach's $\alpha = .77$, respectively. However, the self-efficacy subtest of the RMS had relatively low reliability, Cronbach's $\alpha = .64$.

The variables representing participants' scores on the interest/enjoyment and pressure/tension subtests of the IMI, as well as the intrinsic motivation, self-efficacy, and perceived difficulty subtests of the RMS were chosen for further analysis based on research findings from the current literature on reading motivation in the child population and existing, but sparse, findings with adults. As mentioned above, research indicates a gender disparity in the relationship between intrinsic reading motivation and reading performance, with boys displaying a significant association between the two variables and girls displaying a non-significant association (Logan & Jonston, 2009; Logan et al., 2011; Oakhill & Petrides, 2007). A limited number of research studies indicate a similar gender discrepancy in the relationship between reading self-efficacy and reading performance (Coddington & Guthrie, 2009; Logan et al., 2011). The current study aimed to investigate whether or not these gender discrepancies persist into adulthood by assessing the relationships between intrinsic motivation and reading performance as well as the relationship between self-efficacy and reading performance in a group of adult learners. As previously mentioned, research indicates that intrinsic motivation and interest/enjoyment are conceptually similar constructs (Wigfield, 1997; Eccles & Wigfield, 2002). Therefore, for the purpose of this paper, both constructs were conceptualized as a measure of intrinsic reading motivation.

In addition, research has indicated a gender difference in reading affect, with girls reporting more positive emotions while reading than boys (Lynch, 2002). Also, emotions have been linked with perceived difficulty, which is a predictor of reading performance (Acee et al., 2010; Fulmer et al., 2013). The pressure/tension subscale of the IMI and the perceived difficulty subscale of the RMS were therefore also analyzed in the current

study in order to further investigate the roles of these motivation constructs in the adult population.

Data analysis overview and plan. Struggling adult readers provide a unique opportunity to observe the end-point of the dynamic relationship between literacy development and gender disparities. The current study examined both quantitative and qualitative indices of reading experience and skill within a population of adult struggling readers. Analysis of both direct psychometric assessments of reading and motivation as well as semi-structured interviews allowed for an examination of their relations in this population.

SPSS software was used to assess univariate and multivariate assumptions of normality. Subsequently, a Principal Component Analysis (PCA) was computed in order to reduce the number of variables to two major dimensions of reading performance and two major dimensions of reading motivation. Afterward, a logistic regression model was computed in order to investigate which, if any, of the reading performance and reading motivation variables could predict a participant's gender.

Building the model. A logistic regression procedure was implemented in order to examine the relationship between reading performance, reading motivation, and gender outcomes. Logistic regression produces outcomes that fall between two categorical variables (i.e., male or female), and therefore represents the probability that a certain participant was male or female, based on their reading test scores and reported levels of reading motivation. While, typically, logistic regression is used in a predictive or classification mode (e.g., finding variables that predict classification as one or the other states in the outcome), in the present study this technique was implemented in order to

simply evaluate the relationships between the predictor variables and being male versus female.

Predictor variables were entered into the logistic regression model using a hierarchical method: Model one assessed reading performance as a predictor of gender; model two, reading motivation as a predictor of gender; model three, the relationship between reading performance and reading motivation as a predictor of gender. A model that included individual effects of each reading performance and reading motivation construct, as well as the interaction between these two sets of constructs, was the best fit for the data and analysis proceeded with this model.

Next, standardized residuals were examined in order to determine the overall fit of the model to the data. All cases displayed DFBeta values and Cook's distance values less than one. In addition, only one percent of cases displayed residuals above two standard deviations from the mean, which is within the recommended maximum percentage of cases that exceed two standard deviations (Field, 2013). Of these cases, only two (0.4%) displayed standardized residual values above 2.5, which is within the acceptable percentage of cases that lie outside 2.58 standard deviations (Field, 2013). No cases had residuals greater than 3 standard deviations. The conclusion was that no cases exerted undue influence on the model and that there were no cases for which the model was a poor fit.

Integration of quantitative and qualitative analysis. The analysis of motivation should involve multidimensional theoretical frameworks as well as measurement techniques (Fulmer & Frijters, 2009). In addition to quantitative data analysis based on self-report measures, the current study involved thematic analysis of qualitative semi-

structured interview transcripts. When combining measures of motivation (i.e., self-report and phenomenological analysis), Fulmer and Frijters (2009) suggest an input-output approach, in which the output from one measure informs the basis for analysis of the second measurement. This approach informed the integration of measurement techniques in the current study. Results from the PCAs and logistic regression analysis established the basis for analysis of the semi-structured interview transcripts. Integration of the two measurement techniques (i.e., self-report and semi-structured interviews) was implemented in order to optimize the measurement of participants' reading motivation by allowing for a contextualization of the results of the logistic regression, and by potentially advancing theory in the field of adult learners' reading motivation profiles.

Qualitative analysis. A systematic coding procedure was applied to the transcripts in order to allow for thematic analysis of the qualitative data and to supplement results of the quantitative analysis.

Thematic analysis involves the process of identifying, reporting, and analyzing patterns or themes within data (Braun & Clarke, 2006). The major advantage of thematic analysis is that the approach encourages a rich and detailed interpretation of the data (Braun & Clarke, 2006). For example, Edmunds and Bauserman (2006) found that interviews with 831 elementary school-aged children revealed several reading motivation variables, which included social recognition from family and teachers, the process of buying or giving books to others, being read to by others, and sharing books with others. Heron (2003) conducted interviews with four struggling readers in middle school who were enrolled in a summertime literacy program. Results revealed that students reported an increased level of interest in reading when they were given a choice of reading

material. Other factors that the students attributed to their learning development included receiving extra support from teachers and receiving opportunities to engage in hands on activities. Heron (2003) therefore concluded that when given the opportunity, adolescents who struggle academically provide substantial information regarding their internal motivational states and experiences related to school.

The current study incorporated qualitative analysis in order to gain a deeper insight and a more contextualized description of the quantitative results, and also to determine if additional variables or themes were relevant to the current population that empirical measures may have failed to assess. Moreover, few research studies investigating reading motivation have included participant interviews as a form of data analysis. In fact, a recent review of the literature on reading motivation found that only 3.3% of articles published in the past decade utilized qualitative methods (Conradi et al., 2013). The current study therefore contributes to the existing literature by incorporating thematic analysis of a sample of cross-national, semi-structured interview transcripts from a population of adults who struggle with reading.

A hybrid approach to thematic analysis implemented by Fereday and Muir-Cochrane (2006), which involved the application of both inductive and deductive codes, informed the method of analysis for the current study.

Within the semi-structured interview protocol, participants were asked to answer two questions; “Can you describe a negative experience with reading that has stuck with you over the years?” and “Can you describe a positive experience with reading that has stuck with you over the years?” It is important to note that interviews were conducted at the end of eight hours of cognitive and psychometric testing. A total of 250 transcripts

from interviews with Toronto participants and 300 transcripts from interviews with Atlanta participants were prepared. Interviews were recorded and transcribed as Microsoft Word documents. Two independent research assistants transcribed all interviews, resulting in a set of two transcripts for each interview. Of the 550 transcripts, a random sample of 80 transcripts were examined using the “word compare” function in Microsoft Word in order to produce a strict error rate. The error rate percentage was calculated by dividing the number of word differences between the two transcripts by the total word count, and multiplying by 100. The mean error was 3.7% with only four cases displaying an error rate above 10%, indicating a high level of reliability between the two sets of transcripts.

Next, a template of deductive codes was developed a posteriori, based on results from the quantitative analysis. The manual consisted of three major coding categories reflecting reading motivation and reading performance constructs (i.e., intrinsic reading motivation, negative performance motivation, and reading fluency). The computerized coding software, NVivo, was utilized in order to assign codes to segments of text. After initially reading through the sample of interview transcripts and applying the deductive codes, three inductive codes were added to the existing template (i.e., negative social feedback, extrinsic reading motivation, and reading self-efficacy), which represented new themes within the qualitative data that were unexplained by quantitative results. In addition, the reading fluency code was removed from analysis due to a lack of applicable content. Therefore, the interview transcripts were coded both deductively, in order to investigate themes related to the quantitative results, and inductively, in order to examine emergent themes.

The next step in the thematic analysis procedure involved achieving a high level of inter-coder reliability. Although thematic analysis is beneficial in that it allows for flexible investigation of the data, establishing a qualitative method that is empirically sound is also important (Braun & Clarke, 2006). Therefore, researchers must implement a method of analysis that allows for both flexible and reliable interpretation. In order to accomplish this, two separate research assistants applied the inductive and deductive codes to the same sample of interview transcripts. Each sentence within a transcript was considered a unit of text. An agreement was calculated if both coders applied the same code/theme to the same sentence within a given interview transcript. A disagreement occurred when both coders applied a different code/theme to the same unit of text, or if one coder did not apply a code to a sentence when the second coder did. The inter-coder reliability calculation was established based on the kappa statistic, which NVivo produces using the “coding comparison” function. The kappa statistic indicates the level of inter-coder reliability, with a value of zero representing agreement by chance, and a value of one representing perfect agreement between raters or coders. According to Cohen, a kappa value between 0.61 and 0.80 is a substantial level of agreement and a value of 0.81 or higher is almost perfect agreement (McHugh, 2012). McHugh (2012), however, suggests a more stringent interpretation of the kappa statistic, in which a value of 0.8 reflects a strong level of agreement (i.e., 64-81% reliable data) and values above 0.9 reflecting an almost perfect level of agreement (i.e., 82-100% reliable data). The application of each deductive and inductive code was compared across coders. Any coding disagreements were discussed and resolved among coders in order to establish a high level of inter-coder agreement based on the kappa statistic. A total of four coding

attempts were completed before establishing an acceptable level of agreement between coders. The kappa statistic for each code was above 0.83, and the overall kappa value across codes was 0.88, indicating a strong level of agreement.

Finally, the matrix coding function in NVivo was used in order to examine the similarities and differences in codes across participant transcripts.

Results

Preliminary analyses. Prior to analysis, all seven reading performance variables and all four reading motivation variables were examined through various SPSS programs for accuracy of data entry, missing values, and assumptions of both univariate and multivariate analysis.

Univariate assumptions. First, univariate descriptive statistics were examined using the SPSS “frequencies” function. The “frequencies” analysis indicated that all values across predictor variables were plausible. In other words, all values were within a realistic range with respect to the measurement methods of each variable, indicating that all data had been entered accurately.

Second, the data were screened for cases with missing values. Upon initial inspection, 21 (3.9%) cases were removed from the data set ($n = 544$), as these cases were missing values on the outcome variable (i.e., gender) as well as several predictor variables, reducing the sample size to 523 participants. According to Tabachnik and Fidell (2001), if 5% or less of a data set contain a random pattern of missing values, deletion is an appropriate method. Results of Pearson chi-square tests and independent samples t-tests displayed that those participants who were missing a value on the outcome variable did not differ significantly ($p < .05$) from those participants who were not

missing this value, suggesting a random pattern of missing values. This finding provided further support for the decision to remove these cases from the dataset.

A second screening of the data set was conducted in order to determine whether or not the remaining pattern of missing values across descriptive and predictor variables was random or non-random. The SPSS Missing Values Analysis (MVA) function was computed in order to assess the pattern of remaining missing values. According to Tabachnik and Fidell (2001), variables with a small percentage of missing data (i.e., 5% or less) within a large data set are unproblematic. Results of the MVA displayed that several of the demographic variables (i.e., age, race, language status and education status) and predictor variables (i.e., reading performance and reading motivation measures) displayed missing values. Age (.8%), race (3.4%), language status (1.7%), high school diploma status (1.3%), GED status (1.5%), the TOSCRF (2.3%), the TOSWRF (.2%), the sight word efficiency subtest of the TOWRE (4.8%), the word attack subtest of the WJIII (4.4%), the interest/enjoyment subtest of the IMI (.4%), the pressure/tension subtest of the IMI (.4%), the intrinsic motivation subtest of the RMS (3.4%), and the perceived difficulty subtest of the RMS (3.4%) all contained less than 5% missing values, and therefore did not pose a serious concern (Tabachnik & Fidell, 2001). However, variables representing the phonemic decoding subtest of the TOWRE (5.9%), the letter-word identification subtest of the WJIII (7.8%), and the reading fluency subtest of the WJIII (5.5%) were missing more than 5% of their total data, warranting further investigation.

Dummy-coded variables with two groups (i.e., cases with missing vs. non-missing data) were created for each predictor variable that displayed more than 5% missing values (i.e., the phonemic decoding subtest of the TOWRE, and the letter-word identification

and reading fluency subtests of the WJIII). Mean difference tests and chi-square tests were then computed in order to test for patterns in the missing data across demographic variables (i.e., age, gender, race, language status, and education status). The analyses produced non-significant results, indicating that participants with missing values on the above mentioned variables did not differ significantly from those without missing values on these variables. In addition, the Little's MCAR test produced non-significant results, providing further support for the conclusion that these values were missing completely at random.

Next, single imputation was implemented in order to replace the missing values. Single imputation was chosen because the number of missing values was less than 10% across all variables. In addition, single imputation overcomes the limitations of some of the other imputation methods when the amount of missing data is small and MCAR is supported. As per Tabachnik and Fidell (2001), single imputation is the simplest and most practical approach for estimating missing values. This method provides realistic estimates of the missing values, because the method is based on the observed values of the parameter variable. In addition, the variance of the data is not reduced to the extent that it is with mean substitution, therefore maintaining the integrity of the data. The SPSS "descriptives" analysis was computed prior to, and after conducting the single imputation, which concluded that the mean and standard deviation values of all variables did not change significantly as a result of the imputation. This approach therefore confirmed that single imputation was a valid method for estimating and replacing the missing values in the data set.

All variables were then screened for levels of kurtosis and skewness. The analysis indicated that levels of kurtosis and skewness were within an acceptable range across all variables.

Finally, the data were analyzed for univariate outliers. Cases with standardized z scores greater than 3.29 were considered to be potential outliers (Tabachnik and Fidell, 2001). The SPSS “descriptives” function was computed in order to examine standardized z scores across all predictor variables. Results of this analysis concluded that no univariate outliers were within the data, as all standardized z scores were well below the cut off criterion.

Multivariate assumptions. All predictor variables were assessed in order to ensure assumptions of normality, linearity, and multicollinearity were met.

First, each continuous predictor variable was examined to determine if it was linearly related to the log of the outcome variable (i.e., gender). In order to do this, interaction terms between each predictor and the log of itself were created and entered into a logistic regression model along with each individual variable. All of the interaction terms produced non-significant Wald statistics ($p > 0.5$), indicating that the assumption of linearity of the logit was met (Field, 2013).

Second, a linear regression analysis was computed in order to test for collinearity. The output displayed that VIF values were all less than 10, and tolerance values were all greater than 0.1, indicating that the assumption of multicollinearity within the data was met. Furthermore, a correlation matrix was computed for reading performance and reading motivation variables separately, which displayed that all Pearson r correlations of reading performance and reading motivation variables were below the recommended

maximum correlation size (i.e., $r > .80$), indicating that multicollinearity was unlikely to be an issue.

Lastly, the data were screened for multivariate outliers. In order to do this, Mahalanobis distance values were computed using the linear regression function and degrees of freedom equal to the number of predictor variables. All Mahalanobis distances values were non-significant ($p > .001$), indicating that no multivariate outliers were within the data set (Tabachnik & Fidell, 2001).

Descriptive statistics. Preliminary analysis explored relationships between gender and various demographic variables. Of the total 523 participants, 189 were male (36%) and 334 were female (64%). Mean comparisons were implemented in order to examine gender differences across demographic variables. In addition, Pearson r correlations were examined across gender in order to investigate associations between all reading and motivation variables.

Age in years. Mean comparison analysis indicated that on average, males were younger ($M = 33.05$, $SD = 1.06$) than females ($M = 38.91$, $SD = .75$). This difference, -5.85 , BCa 95% CI $[-8.346, -3.36]$ in age across gender was highly significant $t(517) = -4.61$, $p < .001$. Therefore, results of the current study apply to females who are on average, 39-years-old and males who are on average, 33-years-old. The significant gender disparity in age may represent differences in subjective reasons for participating in the adult literacy program, with younger males needing to upgrade their skills in order to obtain a job and older females wanting to participate in these programs for more personal reasons, such as being able to read to their children and grandchildren. However,

future research comparing reading motivation across gender and age is required to confirm this hypothesis.

Language status. When provided with the question, “What language do you speak?” the most frequently recorded response was English across both males and females (86% and 85%, respectively). Results of this analysis indicated a non-significant association between gender and language spoken (i.e., English or other) $X^2(1) = 0.097$, $p = .79$. Non-significant gender differences were also found for the reported age at which participants first learnt English (i.e., younger than or older than four-years-old) $X^2(1) = 0.03$, $p = .917$, first language spoken at home (i.e., English or other) $X^2(1) = 0.885$, $p = .396$, and language usually spoken at home (i.e., English or other) $X^2(1) = 1.136$, $p = .306$. These results suggest that male and female participants did not significantly differ in terms of their history with learning and speaking English.

Race. When provided with the question, “What describes you?” 28% of males ($N = 189$) recorded Caucasian, 51% recorded black or African American, 4% recorded Asian, 15% recorded American Indian, and 0% recorded Native Hawaiian/other Pacific Islander. When presented with the same question, 26% of females ($N = 321$) recorded Caucasian, 43% recorded black or African American, 8% recorded Asian, 19% recorded American Indian, and 0.6% recorded Native Hawaiian/other Pacific Islander. Therefore, the majority of both males and females in the current study describe themselves as African American. A non-significant association was found between race (i.e., Caucasian or other) and gender $X^2(1) = 0.079$, $p = .836$, indicating that these two demographic variables were independent of each other. In other words, male and female participants did not significantly differ in regards to their racial backgrounds.

It is important to note that a participant's identification with being "black" on the demographics questionnaire may differ across country, with the majority of those from the United States being African American and the majority of those from Canada being recent African immigrants. Of the Atlanta participants ($N = 264$), 88% identified themselves as "black". Of those participants from Toronto ($N = 241$), only 3% identified as being "black". A significant association between country (i.e., United States or Canada) and race (i.e., black or other race) was found for both males $X^2(1) = 146.106, p < .01$ and females $X^2(1) = 217.499, p < .01$. This result suggests that male and female Atlanta participants are significantly more likely to identify themselves as being black in comparison to Toronto participants. However, it is likely that most of these Atlanta participants would identify as being African American rather than African immigrants. The small number of Toronto participants who reported being black, on the other hand, are most likely recent immigrants to Canada. A Pearson χ^2 test was then computed in order to determine the relationship between country and gender. Results revealed a non-significant association, $X^2(1) = .011, p = .928$, suggesting that these two variables were independent. Therefore, although Atlanta participants are significantly more likely to identify as being African American than Toronto participants, no gender disparity was determined in terms of racial status (i.e., an approximately equal number of males and females reside in each country and identify themselves as "black").

Education. Interestingly, the majority of male (83%) and female (82%) participants did not graduate high school in the United States or Canada. A non-significant association was found between gender and graduation status (i.e., whether or not participants had graduated in Canada or the U.S) $X^2 = .039, p = .903$. In addition, the

majority of both males and females in the current study indicated that they had not achieved a high school diploma (82% and 76%, respectively). A non-significant association was found between gender and whether or not participants had received a high school diploma $X^2(1) = 2.682, p = .116$. Lastly, GED status was compared across gender. Again, the majority of both males and females indicated that they had not obtained a GED diploma (98% and 99%, respectively). Furthermore, the association between gender and GED status $X^2(1) = 1.304, p = .431$ was non-significant. These results indicate that male and female participants did not significantly differ in terms of their educational history. In other words, male and female participants were equally likely to have not achieved either a high school diploma or a GED in the United States or Canada.

Table 1a
Frequencies for Participant Demographics Across Gender

Variable		Frequencies (%)			
		Male	Total	Female	Total
Race	Caucasian	52 (28.3)	n = 184	87 (27.1)	n = 321
	Other	132 (71.7)		234 (72.9)	
First Learnt Language	English	138 (76.7)	n = 180	236 (72.8)	n = 324
	Other	42 (23.3)		88 (27.2)	
Age when Learnt English	1-4 years-old	139 (74.3)	n = 187	243 (73.6)	n = 330
	5-years-old or older	48 (25.7)		87 (26.4)	
Current Language Status	English	159 (84.1)	n = 184	281 (85.4)	n = 329
	Other	25 (13.2)		48 (14.6)	
Language Spoken at Home	English	138 (86.4)	n = 184	233 (70.6)	n = 330
	Other	46 (13.6)		97 (29.4)	
Education Status	Diploma	32 (17.2)	n = 186	77 (23.3)	n = 330
	No Diploma	154 (82.8)		253 (76.7)	
	GED	4 (2.1)	n = 188	3 (0.9)	n = 327
	No GED	184 (97.9)		324 (99.1)	

Standard scores were computed for reading test outcomes. Average standard scores across gender are presented in Table 1b. Standard scores of reading tests without norms corresponding to the ages of the participants in the current population are not reported.

Table 1b

Average Standard Scores of Reading Tests Across Gender

Reading Measure	Average Standard Scores	
	Male	Female
WJ Reading Fluency	80.35	83.56
WJ Letter-Word Identification	81.80	83.20
WJ Word Attack	81.78	81.49

Reading measures. A multivariate analysis of variance (MANOVA) was conducted in order to test whether male and female participants produced significantly different levels of reading performance scores. Using Pillai's trace, a significant effect of gender on reading test scores was found, $V = .048$, $F(7, 515) = 3.681$, $p < .01$, partial eta squared = .048. However, separate univariate ANOVAs on the outcome variables revealed non-significant effects of gender on the TOSCRF, $F(1, 521) = 2.45$, $p = .12$, the phonemic decoding subtest of the TOWRE, $F(1, 521) = 2.36$, $p = .13$, the sight word efficiency subtest of the TOWRE, $F(1, 521) = 0.47$, $p = .49$, and the reading fluency subtest of the WJ III, $F(1, 521) = 0.67$, $p = .42$.

Motivation measures. A MANOVA was also conducted in order to compare all motivation measures across gender. Using Pillai's trace, a significant effect of gender on reading test scores was calculated, $V = .026$, $F(4, 518) = 3.52$, $p < .01$, partial eta squared = .026. However, separate univariate ANOVAs on the outcome variables revealed non-

significant effects of gender on the pressure/tension subtest of the IMI, $F(1, 521) = 2.97$, $p = .09$ and the perceived difficulty subtest of the RMS, $F(1, 521) = 3.04$, $p = .08$.

Reading patterns. As part of the eight hour testing component of the CSAL study, participants were administered a Reading Patterns Survey (RPS), which required them to respond on a Likert-type scale. This survey aimed to capture information about reading behaviour.

Reading frequency. To assess reading frequency, participants were asked to indicate whether or not they had ever read an entire book, the number of books they read during the past 12 months, and the duration of time spent reading each day (in minutes). Pearson's chi-square tests were computed in order to investigate gender differences in reading behaviour. Results indicated a non-significant association between gender and whether or not participants reported ever having read a novel $X^2(1) = 1.57$, $p = .234$, indicating that males and females were equally likely to report that they had experience with reading a novel in the past. Participants were also asked to indicate the total number of books read in the past year on a Likert-type scale (i.e., 1 = zero, 2 = one or two, 3 = three to ten, 4 = eleven to forty, and 5 = more than forty). A non-significant association was also found between gender and number of books read per year $X^2(4) = 7.18$, $p = .127$. In addition, mean comparison methods using independent samples t-tests were computed in order to further investigate gender differences in amount of reading behaviour. Again, non-significant differences were found across gender for duration (i.e., minutes) of reading per day ($t(454) = .153$, $p = .879$). These findings indicate that male and female participants engage in similar patterns of reading behaviour.

Reading themes. In addition to investigating gender differences in reading

amount, the RPS also captures reading engagement across themes of text. Results of independent samples t-tests displayed significant differences across gender in regards to maps, ($t(491) = 2.66, p < .01$), manuals ($t(491) = 2.87, p < .01$), history and science texts ($t(492) = 3.78, p < .001$), recipes ($t(492) = -4.26, p < .001$), and novels ($t(491) = -3.04, p < .01$). Males read slightly more information texts, such as maps ($M = 2.68, SD = 1.48$), manuals ($M = 2.99, SD = 1.49$), and history and science texts ($M = 2.97, SD = 1.66$) in comparison to females ($M = 2.32, SD = 1.42$; $M = 2.58, SD = 1.53$; $M = 2.42, SD = 1.5$). However, females read slightly more recipes ($M = 3.17, SD = 1.71$) and novels ($M = 3.71, SD = 1.72$) in comparison to males ($M = 2.51, SD = 1.6$; $M = 3.22, SD = 1.74$). Therefore, although male and female participants read a similar number of books per year and spend an approximately equal amount of time reading per day, they display significant differences when reading engagement is analyzed across themes of text. This finding corresponds with results from PISA, which revealed that boys read newspapers more frequently and girls read fiction books and magazines more frequently (OECD, 2010). These results, which display significant gender differences in patterns of reading engagement, support the hypothesis that male and female adult learners possess different motivation profiles. An understanding of the types of reading materials that male and female adult learners engage with may be useful for researchers and practitioners who are responsible for developing and implementing reading activities and interventions with adult learners.

Correlational differences across gender. Exploratory analyses were conducted in order to investigate gender differences and associations across all reading motivation and reading performance variables. In order to do this, the average z-score difference

across outcome measures was computed using SPSS software. First, Pearson r correlations between reading performance and reading motivation variables were computed separately for male and female participants. Next, the resulting correlations were converted into corresponding z coefficients. The z -scores for male and female participants were then subtracted from each other to produce z -score differences. The z -score differences represented correlational differences between reading performance and motivation across gender. For example, is the relationship between intrinsic motivation and reading ability stronger or weaker for males versus females? Correlations were analyzed across seven different reading performance measures (i.e., the WJIII word attack, letter-word identification, reading fluency subtests, the TOWRE sight word and phonemic decoding subtests, the TOSWRF, and the TOSCRF) and eight different motivation constructs (i.e., the interest/ enjoyment, perceived competence, effort/importance, and pressure/tension subtests of the Intrinsic Motivation Inventory (IMI) questionnaire and the intrinsic motivation, avoidance, self-efficacy, and perceived difficulty subtests of the Motivation for Reading Scale (RMS)).

For five out of the eight motivation constructions, (i.e., perceived competence, effort/importance, avoidance, self-efficacy, and perceived difficulty) the z -score difference was non-significant ($p > 0.5$). For three out of the eight motivation constructs, (i.e., intrinsic motivation, interest/enjoyment, and pressure/tension) significant differences across gender were noted. Specifically, males displayed a significantly stronger positive association between scores on measures of intrinsic motivation and scores on all but one of the reading measures that were analyzed. In addition, males displayed a significantly stronger negative association between scores on the

pressure/tension subscale of the IMI and scores on the sight word efficiency subtest. It was also noted that no significant differences in correlations between self-efficacy scores and reading performance scores were displayed across gender.

Interest/enjoyment and reading performance across gender. The average z-difference across gender for interest/enjoyment was 2.05 ($p = .04$), with males displaying a significantly stronger positive correlation between this motivation construct and various reading measures in comparison to females. In other words, as males' scores on the interest/enjoyment subsection of the IMI questionnaire increased, so did their scores on various reading tasks.

Intrinsic motivation and reading performance across gender. Similarly, the average z-difference across gender for intrinsic motivation was 2.6 ($p = < .01$), with males displaying a significantly stronger positive correlation between this motivation construct and various reading measures. Therefore, as males' scores on the intrinsic motivation subsection of the RMS increased, so did their performance on reading tasks.

Pressure/tension and reading performance across gender. Another significant gender difference was found between the pressure/tension subsection of the IMI, which measures levels of negative affect while reading, and reading performance on the sight word efficiency subtest of the TOWRE. The average z-difference across gender for pressure/tension was -2.7 ($p = < .01$), with males displaying a significantly stronger negative correlation than females. Although this may be a meaningful finding, it is important to note that no other significant gender difference in the relationship between negative affect and reading performance was found across any of the other reading measures included in the analysis. Both males and females displayed a negative

correlation between this motivation construct and reading performance on a variety of reading tests (i.e., WJIII word attack, letter-word identification, reading fluency subtests, TOWRE sight word efficacy and phonemic decoding efficiency subtests, TOSWRF, and TOSCRF), suggesting that reported levels of nervousness, tension, etc., are associated with reading performance across biological sex for this population of struggling readers.

Results of the preliminary analyses suggested a gender difference in the reading motivation profiles of this population of adult learners, with males displaying a significantly stronger positive correlation between intrinsic reading motivation and reading performance than females. The average difference in Pearson r correlations between reading performance and intrinsic motivation across gender was .22, indicating a small to moderate effect size. A logistic regression model was computed in order to further investigate these preliminary findings.

Table 2

Z-difference Coefficients between Reading Performance and Reading Motivation Scores

Reading Performance Measures	Reading Motivation Measures				
	Interest/ Enjoyment	Pressure/ Tension	Intrinsic Motivation	Perceived Difficulty	Self- Efficacy
WJIII Word Attack	1.94 ns	-1.11 ns	2.78*	0.62 ns	1.89 ns
WJIII Reading Fluency	2.05*	-1.11 ns	1.9 ns	-0.73 ns	1.11 ns
WJIII Letter-Word Identification	2.11*	-1.40 ns	2.99*	0.00 ns	1.94 ns
TOWRE PD	1.77 ns	-0.50 ns	2.44*	-0.03 ns	1.06 ns
TOWRE SE	1.00 ns	-2.48*	1.79 ns	-1.40 ns	1.23 ns
TOSWRF	1.49 ns	-1.81 ns	2.52*	1.39 ns	0.83 ns
TOSCRF	1.64 ns	-1.72 ns	2.10*	0.26 ns	1.30 ns

ns = not significant, * = significant

Table 3

Summary of Pearson r Correlations between Male Participants' Reading Test Total Calculated Scores and Reading Motivation Total Calculated Scores

Reading Performance Measures	Reading Motivation Measures				
	Interest/ Enjoyment	Pressure/ Tension	Intrinsic Motivation	Perceived Difficulty	Self- Efficacy
WJIII Word Attack	.104	-.298*	.182*	-.387*	.363*
WJIII Reading Fluency	.076	-.258*	.15*	-.354*	.276*
WJIII Letter-Word Identification	.229*	-.374*	.291*	-.461*	.393*
TOWRE PD	.145	-.301*	.211*	-.451*	.355*
TOWRE SE	.082	-.366*	.144	-.479*	.333*
TOSWRF	-.031	-.266*	.07	-.176*	.195*
TOSCRF	-.022	-.281*	.069	-.291*	.242*

ns = not significant ($p > .05$), * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4
Summary of Pearson r Correlations between Female Participants' Reading Test Total Calculated Scores and Reading Motivation Total Calculated Scores

Reading Performance Measures	Reading Motivation Measures				
	Interest/Enjoyment	Pressure/Tension	Intrinsic Motivation	Perceived Difficulty	Self-Efficacy
WJIII Word Attack	-.073	-.203*	-.071	-.434*	.204*
WJIII Reading Fluency	-.111	-.161*	-.023	-.294*	.180*
WJIII Letter-Word Identification	.040	-.259*	.026	-.461*	.233*
TOWRE PD	-.016	-.259*	-.009	-.449*	.267*
TOWRE SE	-.009	-.155*	-.019	-.374*	.229*
TOSWRF	-.166*	-.106	-.159*	-.296*	.121*
TOSCRF	-.171*	-.130*	-.123*	-.313*	.127*

ns = not significant ($p > .05$), * $p < .05$, ** $p < .01$, *** $p < .001$.

Reducing variables. Prior to computing the logistic regression model, principal component analyses (PCA) were conducted in order to reduce the number of variables into a smaller number of components. Due to the confusion surrounding motivation constructs in the current literature, in which different terms are often used interchangeably, it was deemed appropriate to determine whether or not motivation variables within the current study could be reduced to a smaller number of variables or components.

Reducing reading performance measures. Research on reading development indicates that decoding and fluency are two distinct skills that contribute to higher-order

reading abilities, such as comprehension. The National Reading Panel (2000) identified five separate components of reading ability, including phonemic awareness and fluency. Research also suggests that decoding or phonological awareness skills are prerequisites of reading fluency. For example, Archer et al. (2003) stated that reading fluency requires a learner to have mastered the skill of decoding multisyllabic words. Similarly, Meyer and Felton (1999) define reading fluency as an automatic process that does not require the conscious attention of lower-order reading skills, such as decoding. This assertion implies that automaticity of decoding skills must be mastered in order for a learner to develop his or her fluency skills. In addition, Pikulski and Chard (2005) developed a nine-step approach for developing reading fluency, with one of the steps requiring educators to teach the application of a decoding strategy. Therefore, research suggests that reading development involves the systematic mastery of distinct skills, with decoding skills being a prerequisite for reading fluency. The hypothesis was that the seven reading measures could be separated into two overarching dimensions of reading ability (i.e., measures of decoding and measures of fluency).

Reducing reading motivation measures. The literature on reading motivation indicates that many reading motivation constructs are interrelated, and researchers often use different terms to represent the same motivation construct (Conradi et al., 2013). According to Marsh et al. (2003), motivation researchers must be cautious of jingle (assuming motivation measures with the same name reflect the same constructs) and jangle (assuming motivation measures with different names reflect different constructs) fallacies. A goal for this analysis was therefore to determine if the current motivation constructs could be reduced to a smaller number of distinct reading motivation measures.

Based on the results of the correlation analysis, the interest/enjoyment, intrinsic motivation, and pressure/tension variables were included in the PCA. Additionally, the perceived difficulty subtest of the RMS was included in order to incorporate two measures of positive motivation and two measures of negative motivation.

As mentioned previously, research indicates that interest and intrinsic motivation are related constructs. Therefore, the hypothesis was that measures of reading interest and measures of intrinsic reading motivation would load onto the same factor. In addition, research indicates a link between negative affect (e.g., pressure, tension, etc.) and perceived difficulty, which reflects subjective opinions about the difficulty of a given task (Fulmer & Tulis, 2013). Findings from the research on perceived difficulty indicate that it is associated with increased levels of negative affect, such as anger and anxiety. For example, a study by Acee et al. (2010) compared college students' reported levels of negative emotions during over- versus under-challenging tasks, and found that tasks perceived as overly challenging were associated with increased feelings of anxiety, anger, hopelessness, and shame. Fulmer and Tulis (2013) assessed sixth and seventh-grade students' levels of affect and interest at various points during a moderately difficult reading task (i.e., before, during, and after task completion). Results of the study found a significant negative relationship between perceived difficulty and affect during and after completion of the reading task, suggesting that those who perceived the task as being more difficult reported decreased levels of positive affect across task completion. In addition, students' reported affect continued to decrease (i.e., become more negative) after the reading task had been completed. These research findings suggest that perceived difficulty and negative affect are related, with increased perceptions of task difficulty

being associated with more frequent reports of negative emotions. The hypothesis therefore was that the pressure/tension and perceived difficulty variables would load onto the same factor.

In addition, the hypothesis was that the two positive motivation constructs (i.e., interest and intrinsic motivation) and the two negative motivation constructs (i.e., pressure/tension and perceived difficulty) would load onto separate factors, thereby creating two separate indices of reading motivation; one positive measure and one negative measure. Although interrelated, research has indicated that interest and affect are two distinct motivation constructs. Fulmer and Tulis (2013) demonstrated that patterns of reading interest and affect differed across the completion of a reading task, with students' levels of interest remaining stable after task completion, and levels of affect continuing to decrease. This finding provides support for the hypothesis that measures of interest and affect would load onto separate factors.

Separate PCAs were conducted using principal axis factoring with oblique rotation (direct oblimin). Oblique rotation was chosen as an appropriate method for rotating the factors, because the hypothesis was that the factors were interrelated. According to Field (2013), if empirical support indicates that the factors may be correlated, direct oblimin should be selected as the rotation method. This hypothesis was confirmed, as the factor correlation matrix produced a moderate correlation between the two underlying reading performance factors (.614), indicating that the decoding and fluency measures were correlated. The correlation matrix also produced a moderate negative correlation between the two underlying reading motivation factors (-.410). The

conclusion was therefore that an oblique rotation method was appropriate for the current sets of variables.

The first PCA included the seven reading performance variables (i.e., the WJIII word attack, letter-word identification, and reading fluency subtests, the TOWRE sight word efficacy and phonemic decoding efficiency subtests, the TOSWRF, and the TOSCRF). The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, $KMO = .85$, which is well above the acceptable limit of .5 (Field, 2013). A KMO value close to 1 indicates that the factor analysis should produce distinct and reliable factors (Field, 2013). Two factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 81.03% of the variance. The scree plot corresponded with these results, as it displayed inflexions justifying extraction of two factors. Therefore, inspection of the eigenvalues, scree plot, and variable loadings on each factor suggested a two-factor solution to the seven different reading variables. Table 5 displays the factor loadings after rotation. Based on the reading performance variables that cluster on each factor, the first factor was conceptualized as a measure of reading decoding skills and the second factor was conceptualized as a measure of reading fluency skills. The sight word efficiency subtest of the TOWRE was the only variable that loaded approximately equally onto both factors. This crossloading is most likely due to the fact that the sight word efficiency subtest involves both decoding and fluency skills, as the learner is required to decode as many words as possible within a certain period of time (i.e., 45-s). This reading measure is therefore represented by both factors.

Table 5

Summary of PCA Results for the SPSS Reading Performance Measures (N = 469)

Pattern Matrix Factor Loadings		
Item	Decoding	Fluency
Phonemic Decoding Efficiency	.94	-.04
WJIII: Word Attack	.89	-.03
WJIII: Letter-Word Identification	.82	.06
Sight Word Efficiency	.45	.41
Test of Silence Contextual Reading Fluency	-.03	.94
Test of Silent Word Reading Fluency	-.07	.91
WJIII: Reading Fluency	.15	.72
Structure Matrix Factor Loadings		
Item	Decoding	Fluency
Phonemic Decoding Efficiency	.91	.54
WJIII: Word Attack	.87	.51
WJIII: Letter-Word Identification	.86	.57
Sight Word Efficiency	.70	.68
Test of Silent Contextual Reading Fluency	.55	.93
Test of Silent Word Reading Fluency	.49	.87
WJIII: Reading Fluency	.59	.81
Eigenvalues	4.57	1.12
% of variance	65.22	15.82

In order to verify the results of the PCA, Pearson r correlations were computed to further investigate the correlations among all seven reading variables. Moderate to large positive correlations were found among reading decoding variables and large positive correlations were found among reading fluency variables. See Table 6 for a complete list of all correlations among reading performance measures.

Table 6

Summary of Pearson r Correlations between Participant Scores on Reading Performance Measures

	2	3	4	5	6	7
1. WJIII Word Attack	.478***	.767***	.801***	.537***	.411***	.483***
2. WJIII Reading Fluency	-	.516***	.516***	.651***	.662***	.734***
3. WJIII Letter-Word Identification		-	.754***	.623***	.446***	.511***
4. TOWRE PD			-	.658***	.399***	.453***
5. TOWRE SE				-	.550***	.572***
6. TOSWRF					-	.826***
7. TOSCRF						-

Note: ns = not significant ($p > .05$), * $p < .05$, ** $p < .01$, *** $p < .001$.

The second PCA included four reading motivation measures (i.e., the interest/enjoyment and pressure/tension subtests of the IMI, and the intrinsic motivation and perceived difficulty subtests of the RMS). The KMO measure verified the sampling adequacy for the analysis, $KMO = .58$. Two factors had eigenvalues over Kaiser's criterion of 1 and in combination, explained 83.09% of the variance. Inspection of the eigenvalues and variable loadings on each factor suggested a two-factor solution to the four reading motivation variables that were entered into the PCA. Table 7 displays factor loadings after rotation. Based on the motivation variables that cluster on each factor, the

first factor was conceptualized as a measure of intrinsic reading motivation and includes the interest/enjoyment subtest of the IMI and the intrinsic motivation subtest of the RMS. The second factor was conceptualized as a measure of negative reading performance motivation, and includes the pressure/tension subtest of the IMI and the perceived difficulty subtest of the RMS.

Table 7

Summary of PCA Results for the SPSS Reading Motivation Measures (N = 469)

Pattern Matrix Factor Loadings		
Item	Intrinsic Reading Motivation	Negative Performance Motivation
Interest and Enjoyment	.91	.01
Intrinsic Motivation	.87	-.02
Perceived Difficulty	.04	.74
Pressure and Tension	-.05	.72
Structure Matrix Factor Loadings		
Item	Intrinsic Reading Motivation	Negative Performance Motivation
Interest and Enjoyment	.91	-.36
Intrinsic Motivation	.87	-.37
Perceived Difficulty	-.35	.74
Pressure and Tension	-.26	.72
Eigenvalues	2.22	1.11
% of variance	55.40	27.68

Pearson r correlations demonstrated a large positive correlation between interest/enjoyment and intrinsic motivation constructs ($r = .786$, $p = < .01$) and a moderate positive correlation between the pressure/tension and perceived difficulty motivation constructs ($r = .533$, $p = < .01$). These Pearson r correlations correspond with the PCA results, as a significant large correlation was found between interest/enjoyment and intrinsic motivation, which represent the first factor, and a significant moderate correlation was found between pressure/tension and perceived difficulty, which represent

the second factor. In addition, small negative correlations were found between variables from opposing factors. For example, interest/enjoyment and perceived difficulty were negatively associated ($r = -.219, p = < .01$). This replicates findings from a study by Li, Lee, and Solmon (2007), which found that levels of perceived difficulty of a physical education task, as reported by grade eight students, was negatively correlated with their reported levels of interest in the task. In the present study, small negative correlations were also found between interest/enjoyment and pressure/tension ($r = -.301, p = < .01$), intrinsic motivation and pressure/tension ($r = -.298, p = < .01$), and intrinsic motivation and perceived difficulty ($r = -.249, p = < .01$). Refer to Table 8 for a complete list of all correlations between motivation variables.

Table 8

Summary of Pearson r Correlations between Participant Scores on Reading Motivation Measures

	2	3	4
1. Interest/Enjoyment	.786***	-.301***	-.219***
2. Intrinsic Motivation	-	-.298***	-.249***
3. Pressure/Tension		-	.533***
4. Perceived Difficulty			-

Note: ns = not significant ($p > .05$), * $p < .05$, ** $p < .01$, *** $p < .001$.

Logistic regression model. The factors resulting from the PCAs were then entered into a logistic regression model in order to determine if several continuous variables (i.e., reading decoding, reading fluency, intrinsic reading motivation, and negative reading performance) could predict the probability of a categorical outcome (i.e., gender). In other words, what, if any, combination of reading performance variables

and motivation variables would show the strongest relationship with the gender of a participant?

A note on self-efficacy. Self-efficacy was not included in the regression model for two reasons. First, correlation analysis did not display a significant gender difference in the relationship between the self-efficacy subtest of the RMS and reading performance across all reading measures. Please see Table 9 for a complete list of z-score correlations between self-efficacy and reading performance across gender. In other words, both males and females displayed significant positive correlations between self-efficacy and reading performance, suggesting that efficacy beliefs are an important indicator of reading achievement regardless of biological sex. This finding may suggest that in order for both male and female adult learners to put effort into a reading test, they need to feel that they can successfully complete the task. Alternatively, this finding may indicate that male and female adult learners need to perform well on a reading test in order to feel that they are good readers.

Second, when the self-efficacy construct was added to the PCA, it loaded equally onto each factor. Specifically, the self-efficacy variable loaded positively onto the intrinsic motivation factor, and negatively onto the negative performance motivation factor. These findings are consistent with the research on reading self-efficacy, which indicates that this construct is related to both an individual's level of intrinsic motivation and level of negative affect (Lynch, 2002; Zimmerman, 2000). As mentioned previously, research has shown that an individual must feel competent in an activity in order to be intrinsically motivated to engage in that activity (Ryan & Deci, 2000). As well, research indicates that self-efficacy is related to negative performance motivation, as students with

high levels of self-efficacy report less negative emotion (e.g., stress and anxiety) when completing a challenging task (Zimmerman, 2000). Therefore, those readers with high reading efficacy beliefs are more intrinsically motivated to engage in reading activities, and will experience less negative emotion when reading. Reading self-efficacy was therefore removed from further analysis, as gender differences in the relationship between efficacy scores and reading performance were non-existent, and self-efficacy could not be distinctly explained by either overarching factor within the PCA.

In addition, a mean comparison analysis indicated that scores on the self-efficacy subscale of the RMS did not differ significantly across gender $t(503) = .928, p = .354$.

Table 9

Z-difference Correlation Coefficients Between Self-Efficacy Scores and Reading Test Score

Reading Performance Measures	Self-Efficacy
WJIII Word Attack	1.89 ns
WJIII Reading Fluency	1.11 ns
WJIII Letter-Word Identification	1.94 ns
TOWRE PD	1.06 ns
TOWRE SE	1.23 ns
TOSWRF	0.83 ns
TOSCRF	1.30 ns

ns = not significant, * = significant

The final logistic regression model. As mentioned previously, factors were entered into the model hierarchically, with the final model consisting of the reading performance factors, the reading motivation factors, and the interaction terms between

each reading performance and reading motivation factor. The factors were then systematically removed until all remaining factors produced a significant Wald statistic, indicating that each factor significantly predicted the outcome variable (i.e., gender). From the entire set of measures originally entered into the model, the logistic regression analysis identified five significant factors that uniquely predicted the gender of a participant. The best predictor was a participant's fluency scores (Wald $X^2 = 21.47$, $p < .0001$), followed by intrinsic reading motivation scores (Wald $X^2 = 15.8$, $p < .0001$), the interaction between fluency and intrinsic motivation (Wald $X^2 = 9.81$, $p < .01$), decoding scores (Wald $X^2 = 9.77$, $p < .01$), and finally, negative performance motivation scores (Wald $X^2 = 9.1$, $p < .01$).

Interpretation of the logistic regression output. Results of the logistic regression indicated that fluency, decoding, intrinsic reading motivation, and negative performance motivation scores, as well as the interaction between fluency and intrinsic reading motivation were all significant predictors of a participant's biological sex. Specifically, examination of the odds ratios indicated that the higher the decoding score, the less likely the participant was to be female, suggesting that in this population of adult readers, males performed better on decoding tasks than females. Higher fluency scores, on the other hand, were associated with being female, indicating that female participants in the current population performed better on fluency tasks. This result is consistent with findings from a study by MacArthur et al. (2010) involving adult learners, which found that women performed significantly higher on measures of reading fluency than men.

In addition, results indicated that higher intrinsic reading motivation and negative performance motivation scores were associated with being female. These findings

indicate that females reported higher levels of intrinsic reading motivation as well as more negative emotions and higher perceptions of difficulty related to reading in comparison to males.

Finally, the regression output indicated that the interaction term between fluency and intrinsic reading motivation was a significant predictor of biological sex. In order to investigate this further, the relationship between gender and intrinsic reading motivation was compared across those participants who received low scores on fluency tasks and those who received high scores on fluency tasks. In order to do this, a median split was computed on the fluency factor scores. The fluency factor variable was then re-coded into two categories; those participants who scored higher on fluency measures and those who scored lower on fluency measures. Scatterplots were then computed to analyze the association between the logistic regression predicted probabilities and intrinsic reading motivation scores. Two scatterplots were computed; one for those who scored in the upper half of the fluency measure, and one for those who scored in the lower half. Analysis of the scatterplots indicated that there was an apparent relationship between intrinsic reading motivation and gender when reading fluency was low, however no relationship between intrinsic motivation and gender existed when reading fluency was high. This indicates that among individuals who lack reading fluency skills, females are more likely to report a higher level of intrinsic reading motivation than males. In other words, males who struggle with reading report low levels of intrinsic reading motivation.

Qualitative Results

Using the Fulmer and Frijters (2009) input-output approach to measurement integration, results of the quantitative analysis informed the thematic analysis of the

qualitative interview transcripts. Specifically, codes were compared across gender as well as across model fit. Standardized residuals and predicted probability outcomes were analyzed in order to determine if a participant was a good fit versus a poor fit for the logistic regression model. The sample of interview transcripts consisted of five transcripts representing females who were strongly predicted by the logistic regression model to be female, five transcripts representing males who the model strongly predicted to be male, five transcripts that the model predicted equally likely to be male or female, and five transcripts of both males and females who were misclassified by the model (i.e., males predicted by the model to be female and vice versa).

Both deductive and inductive themes were analyzed across and within the pre-defined groups of participants. For example, the frequency at which each code was applied to female versus male transcripts was analyzed, along with the frequency at which each code was applied to those participants who fit versus did not fit the model (e.g., females strongly classified by the model to be female, females classified by the model to be equally likely to be either gender, and females misclassified by the model to be male). Deductive themes relating to the quantitative analysis results included reading fluency, intrinsic reading motivation and negative performance motivation. Inductive themes that emerged from the data included extrinsic reading motivation, negative social feedback, and reading self-efficacy. See Table 10 for a complete list of the definitions relating to each code that was applied to the interview transcripts. Deductive and inductive themes are reviewed below.

Table 10
Definitions of reading motivation codes

Reading Motivation Codes	Definitions
Intrinsic reading motivation	The act of reading itself is the reward. Apply this code to statements about enjoyment or interest in reading, or inspiration related to reading. For example, “I enjoy reading”, “Reading is fun”, “Reading allows me to be imaginative”, or “The story, [title] really inspired me.” Do not apply this code to statements about extrinsic rewards. For example, “A positive experience was when I read in front of my class and everyone was clapping for me” or “After attending this reading program I plan to graduate and get a better job.”
Negative performance motivation	Apply this code when participants discuss negative emotions related to reading (i.e., pressure, tension, stress, anxiety, nervousness, or frustration) and difficulty perceptions of reading tasks. For example, “I feel anxious when I have to read”, “Reading makes me frustrated”, “I find reading hard”, or “I make a lot of mistakes when I read.” Do not apply this code to statements about positive emotions or positive efficacy beliefs such as, “Reading is fun”, “I feel relaxed when I read”, “Reading makes me feel good”, “Reading is easy”, or “I don’t make many mistakes when I read.”
Extrinsic reading motivation	Apply this code when a participant describes reading in order to gain a reward or some separable outcome (e.g., employment, a diploma, positive recognition from others, or to be able to read to others). For example, “A positive experience was when I read in front of my class and everyone was clapping for me” or “I practice reading so that I can graduate and get a better job.” Do not apply this code when a participant describes reading for intrinsic purposes, such as an interest in reading material or an enjoyment in the act of reading itself.
Negative social feedback motivation	Apply this code if a participant describes an experience of receiving negative feedback from others (e.g., teachers or peers) pertaining to their reading skills. This includes statements such as, “I read my essay in front of the class and everyone laughed at me”, “I had trouble pronouncing the words and everyone made fun of me”, or “The teacher told me I was a poor reader.” This does not include statements about positive social feedback (i.e., verbal praise).
Reading self-efficacy	Apply this code if a participant describes a perceived improvement in their reading abilities or the desire to improve their reading abilities. For example, “A positive experience is that I learnt to read”, “I am doing better with pronouncing words”, “I can now understand the meaning of most words”, or “I want to keep practicing so that I become a better reader.” Do not apply this code if a participant describes perceptions of reading difficulty. For example, “I struggle with pronouncing most words”, “Reading is a challenge for me”, or “I make a lot of mistakes when I read.”

Deductive Thematic Analysis

Intrinsic reading motivation. When intrinsic motivation themes were compared across groups of participants, it appeared that this code was applied to only five out of the 24 total transcripts (21%) that were analyzed. Despite results from the logistic regression analysis, which indicated that intrinsic motivation was associated with being female, themes of intrinsic motivation were not present among interview transcripts belonging to female participants who were a good fit for the model (i.e., those with low standardized residuals and high predicted probability values). In other words, females who fit the model best did not discuss terms related to intrinsic motivation (e.g., interest, enjoyment, etc.).

Of the five transcripts that included themes of intrinsic motivation, two represented male participants who were misclassified by the regression model to be female. One of these participants described enjoyment in the process of reading a particular novel: “I enjoyed reading this book about, it’s called Tweet...it was really good. I enjoyed it” (147, Toronto male). The second participant described enjoyment in a broader range of text: “I like either reading comic books...magazines and/or instructions” (213, Toronto male).

In addition, one male participant who fit the model (i.e., was strongly predicted to be male) discussed terms related to intrinsic reading motivation. This participant described that he enjoyed reading a particular novel: “...the Hobbit just came out and I read that and that was really good.” (050, Toronto male).

Lastly, two participants who were predicted by the regression model as equally likely to be male or female discussed themes related to intrinsic reading motivation. One

of these participants was a female who stated that, “reading helps me...to take me to a place where I can let me imagination wonder...so it allows me to be more creative” (031, Atlanta female). The second participant predicted as equally likely to be male or female was in fact a male who described: “...when I started reading that book...it kind of inspired me that I want to read more” (006, Toronto male).

Overall, intrinsic reading motivation was not a common theme among the interview transcripts. Only 21 percent of the total analyzed transcripts included themes related to intrinsic motivation. Despite results from the quantitative analysis, which indicated that intrinsic motivation was a significant predictor of gender (i.e., associated with being female), females who were strongly predicted to be female did not report that they were intrinsically motivated to read. Of those participants who reported themes related to intrinsic motivation, these descriptions often included experiences with particular novels. Therefore, these participants related positive experiences with reading to past engagement with a specific novel.

Negative performance motivation. When negative performance motivation themes were compared across groups of interview transcripts, it appeared that this code was applied to 19 out of the 24 total transcripts (79%), indicating that perceived difficulty of reading tasks and negative affect while reading were common themes discussed by participants. This theme was reported approximately equally across each group of transcripts and across gender within groups, indicating that both males and females who fit and did not fit the regression model discussed difficulties with reading and negative emotions while reading. Specifically, of those participants for whom the model was a good fit, 100% of females discussed negative performance motivation and 80% (i.e., four

out of five) of males discussed this theme. Of those participants misclassified by the model, 100% of both males and females discussed themes related to negative performance motivation. Therefore, out of the five males misclassified to be female and the five females misclassified to be male, all reported experiences with perceived difficulty and negative emotions related to reading tasks. Lastly, of the five participants who were predicted as equally likely to be male or female, three discussed negative performance motivation. Of these three participants, two were males and one was female. Therefore, although results from the logistic regression indicated that higher levels of negative performance motivation were associated with being female, a gender disparity was not apparent in the qualitative data.

When asked about a negative experience with reading, participants often described difficulties with pronunciation. For example, one participant said, “I had a hard time reading it and pronouncing the words and um and I [was] really embarrassed about it” (149, Atlanta male). Another participant said, “I didn’t like to read because I found it hard to pronounce the word[s]” (262, Atlanta female). Participants also described difficulties with reading comprehension. For example, one participant described, “...Reading about...Let’s say about sports. Maybe I don’t understand some words” (132, Toronto male). Another participant described difficulties with comprehension related to work responsibilities: “...you need to...sign any contracts or something and you are tied up because you cannot understand completely what they say...” (162, Toronto male). These participant reports highlight how comprehension issues can impact both personal and professional reading tasks. Lastly, one participant associated negative affect with comprehension difficulties: “...I feel uncomfortable when I don’t know how to read and

when I don't know [the] meaning of the word" (162, Atlanta female). It therefore appears that many participants related negative reading experiences specifically with pronunciation and comprehension issues.

Some participants also mentioned negative emotions while reading. For example, when asked by the interviewer to identify emotions during a reading task, one participant reported feeling, "Mad, sad, frustrated, ready to give up" (110, Toronto male). Another participant reflected: "Every time I had to read...I would get really nervous" (006, Toronto male). Lastly, when prompted to identify emotions surrounding a reading task, one participant said, "It makes me feel tired...on the inside which is overwhelming a little with anxiety" (213, Toronto male). Participants therefore reported experiencing a variety of negative emotions while engaged with a reading task, which may impact their reading performance and overall reading motivation. Based on these findings, negative performance motivation may play an important role in the overall levels of reading motivation and reading performance of adult learners, with both males and females describing specific difficulties with reading tasks and negative affect associated with reading tasks.

Inductive Thematic Analysis

Reading self-efficacy. One emerging theme from the qualitative data was reading self-efficacy, which was coded if participants described reading improvements, learning how to read, or the goal to continue working on and improving reading skills. This theme corresponds with, or perhaps reflects, approach-oriented achievement goals. When defined using a non-competitive framework, approach-oriented achievement goals reflect positive competency beliefs that do not necessarily involve social comparison (Schaffner,

Schiefele, & Ulferts, 2013). Past research has indicated a positive relationship between approach-oriented achievement goals and academic performance (Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002).

When asked about a positive experience with reading, a total of 12 out of 24 participants (50%) discussed themes related to reading self-efficacy. These themes were discussed equally across groups of participants and across gender. Specifically, out of the 12 transcripts to which a reading self-efficacy code was applied, six were males and six were females. This finding corresponds with results from the quantitative analysis, which produced significant positive correlations between self-efficacy scores and reading performance scores for both males and females. In other words, a gender gap in reading self-efficacy was not apparent in either quantitative or qualitative analyses. Due to these findings and the fact that half of the total interview transcripts included participant reports of efficacy beliefs, perceptions of reading self-efficacy appear to play an important role in the motivation profiles of both male and female adult learners.

When asked to describe a positive experience with reading, participants often reported feeling that their reading skills had improved since prior to attending the literacy program. For example, one participant stated: “I think right now I’m doing better” (200, Atlanta male). A second participant stated: “It was nice to read and...sound good. I am going on perfect” (073, Toronto female). These participants associated positive experiences with reading to increased perceptions of reading self-efficacy.

Other participants described a desire to continue improving their reading skills. For example, one participant said: “...I’ve been learning from things like every day and trying to read a lot so I can improve more” (162, Toronto male). This participant’s report

suggests a possible reciprocal relationship between efficacy perceptions and engagement with reading material. Lastly, one participant related competency beliefs to the ability to read a particular book: “I read one of the...Dr. Seuss books to my little cousin from the front to back...right to the back, and I never could have 10 years ago” (110, Toronto male). For this participant, the achievement of reading a book may have contributed to his perception of reading self-efficacy.

Many participants attributed positive reading experiences to increased perception of reading self-efficacy. Perception of reading efficacy may therefore contribute to an adult learner’s continued participation in a literacy program or persistence with reading material and, subsequently, to their overall reading achievement.

Extrinsic reading motivation. Another emerging theme from the qualitative data was extrinsic reading motivation, which represents the decision to engage in a reading task in order to receive a separable reward rather than for intrinsic reasons (i.e., enjoyment in the act of reading itself). This code was applied to a total of 8 out of the 24 interview transcripts that were analyzed (33%). When comparing extrinsic motivation themes across participants who were a good fit for the model (i.e., the model accurately predicted their gender), male participants reported substantially more themes related to extrinsic motivation than female participants. Specifically, 80% of males who were a good fit for the model discussed reading for extrinsic rewards, whereas only 20% of females who were a good fit for the model described extrinsic motivation. Moreover, when comparing males who did and did not fit the model (i.e., males misclassified by the model to be female), those who fit the model reported themes of extrinsic reading motivation substantially more often than those who did not fit the model. Again, 80% of

males who were a good fit for the model discussed extrinsic reading motivation, whereas only 25% of males who were a poor fit for the model discussed being extrinsically motivated to read. These findings suggest that extrinsic motivation may play an important role in male adult learners' decisions to attend a literacy program and to engage with reading materials.

Of those males who discussed reading for extrinsic purposes, themes included reading in order to attend a secondary education program, to obtain a better job, to read to younger family members, and to receive positive social recognition. For example, one male described: "...the experience of grading and getting...more vocabulary...now I'm available to understand more so now I can apply for better jobs or do something on my own" (162, Toronto male). This participant attributed improved literacy skills to the ability to obtain employment and gain independence. Another male participant described: "I like reading...so that...I know what to do without messing it up...doing the right thing...even at the work place" (213, Toronto male). This participant related reading skills to the ability to perform at work, which speaks to the importance of literacy in workplace environments. One female who was misclassified to be male described themes of extrinsic reading motivation. When asked to describe a positive experience with reading this participant said, "I passed my graduation test" (250, Atlanta female). For this participant, being able to graduate was attributed to her reading ability. These participant reports highlight the importance of reading skills for academic achievement as well as workplace competency, and represent statements of extrinsic reading motivation.

One female participant who was strongly predicted to be female reported themes of extrinsic motivation. When asked to describe a positive experience with reading, this

participant stated: “It open[s] up so many doors for you, so many different opportunities. You experience difference things, you learn different...cultures...reading is knowledge” (236, Atlanta female). Therefore, for this participant, reading was associated with a general increase in life experiences and knowledge.

These findings indicate that for males in particular, extrinsic reading motivation may exert a significant influence on the decision to attend ABE programs and to engage with reading materials. The majority of females, on the other hand, did not report themes related to extrinsic motivation. The one female who described extrinsic reading motivation related reading achievement to increased knowledge and opportunities, rather than to a specific external outcome, such as obtaining a job or high school degree.

Negative social feedback. A final theme that emerged from the qualitative data was negative social feedback, which reflected participant experiences with receiving negative feedback from others (e.g., a teacher or classmates) in regards to their reading performance. When asked to describe a negative experience with reading, a total of eight out of 24 participants (33%) discussed experiences with negative social feedback. Themes of negative social feedback were distributed approximately equally across groups of transcripts. Negative social feedback often reflected experiences with reading out loud in front of peers. For example, one participant described: “[the teacher] put me on the spot so I had to read in front of the whole class and they [were] like laughing and making a joke out of it” (111, Atlanta female). Another participant described a similar experience: “My worst experience in the past is when I am with a group of people and I had to go in front of them and read and when I make a mistake on a word and they laugh at me” (073, Toronto female). Yet another participant described social feedback in the

form of negative attention from peers: “I had...a hard time pronouncing words and everybody laughed at me, I always remember that” (207, Atlanta male). Lastly, one participant stated that negative social feedback impeded his or her learning motivation: “Back in high school...it was a couple of people...making fun of me like cause...my problem was reading and I think that kind of stuck with me of being afraid to...get out there [and] really learn” (200, Atlanta male). It appears that when asked to describe a negative experience with reading, many participants discussed a past experience with reading in front of others. These results indicate that negative feedback from peers in elementary school or high school may impact future reading motivation and performance.

Based on inductive thematic analysis, two emergent themes were identified that were not empirically measured; extrinsic reading motivation and negative social feedback. These themes may represent motivation constructs that influence adult learners’ willingness to engage with reading tasks and should therefore be further investigated.

Discussion

Reading performance across gender. Results of the logistic regression analysis indicated that reading fluency was associated with being female, whereas decoding skills were associated with being male. This indicates that in the current population of adult learners, females performed better on measures of fluency, whereas males performed better on measures of decoding. Shaffner, Schiefele, and Ulferts (2013) found similar results, as girls significantly outperformed boys on higher order reading comprehension tasks (i.e., passage-level), but not on lower order comprehension tasks (i.e., word and sentence-level). In addition, when comparing performance on reading components across

gender, MacArthur et al. (2010) found that women performed significantly better than men on fluency but not on other reading components (e.g., decoding). This finding, which was replicated in the current study, suggests that females may perform better on reading tests involving higher order reading skills, but may perform equally well or less well than males on tests of lower order reading skills.

In order to understand the gender discrepancy in reading skills present in the current population, the format of the reading measures was analyzed further. The fluency measures analyzed in the current study (i.e., the TOSWRF, TOSCRF, and the WJ III fluency subtest) all include a language or comprehension component. For example, the WJ III fluency subtest requires participants to read a sentence and then determine whether or not the sentence is true or false. Adults in the current population may have a history with reading in which they have acquired a long list of sight words via memorization strategies. Therefore, it is possible for participants in the current study to complete these measures of fluency without necessarily having strong decoding skills. Even if a participant is unfamiliar with one or two words within a sentence and unable to decode them, he or she may still be able to comprehend enough of the sentence in order to determine if it is a true or false statement. It is therefore possible that females in the current population had higher comprehension skills due to a larger repertoire of sight words, and were therefore able to perform better on these measures of fluency, which involved a comprehension component, in comparison to males. However, when given a decoding task, such as the identification of nonwords, these females may not have strong letter-sound identification skills and therefore may not be able to perform as well on these

measures. Rather, males in the current population displayed better decoding skills in comparison to females.

Alternatively, these results may indicate that phonemic decoding is not related to fluency ability in the current population of learners. As mentioned previously, past research concerning children's reading development has suggested that phonemic decoding is a pre-requisite skill for reading fluency (Archer et al., 2003; Pikulski & Chard, 2005). However, a study by Mellard, Anthony, and Woods (2012) investigated the relative components of oral reading fluency in a population of low literate adults and found that phonemic decoding was not an important predictor of adult learners' reading fluency abilities. This finding suggests that among low-literate adult learners, phonemic decoding and reading fluency skills may be distinct components of overall reading ability. The PCA computed in the current study also produced two distinct reading components; one which was conceptualized as representing a measure of decoding, and the other as representing a measure of fluency. These findings may explain the results of the current study, which found a gender discrepancy across reading skills, with males performing better on decoding tasks and females performing better on measures of fluency.

Intrinsic motivation and reading performance across gender. Overall findings from the quantitative analysis displayed that the gender disparity found in the relationship between intrinsic reading motivation and reading performance in children was also present in the current population of adult learners. Pearson r correlations displayed that the association between intrinsic reading motivation and reading performance was significantly stronger for males than females. This result may indicate that in order to

perform well on a reading test, males need to report feelings of interest and enjoyment towards reading. In other words, males need to be intrinsically motivated in order to put effort into a reading task. Alternatively, these results may indicate that as males' reading performance improves, so does their level of interest and enjoyment in reading. In other words, males need to be successful at reading tasks in order to enjoy reading or be interested in reading. Therefore, findings from the correlational analysis may suggest a reciprocal relationship between intrinsic motivation and reading achievement for males, but not for females. This result corresponds with findings from research conducted with school aged children, which has indicated that boys display a stronger reciprocal relationship between intrinsic motivation and reading performance than girls (Ainley, Hillman, & Hidi, 2002; Logan & Medford, 2011; Oakhill & Petrides, 2007).

Results of the logistic regression analysis indicated that intrinsic reading motivation was a significant predictor of gender. Specifically, the higher a participant scored on measures of intrinsic motivation, the more likely they were to be female. However, intrinsic reading motivation was a significant predictor of gender only among participants who displayed low scores on fluency tasks. Among those participants who displayed higher fluency scores, the relationship between intrinsic motivation and gender failed to exist. This finding suggests that males who demonstrate poor fluency skills report significantly lower levels of interest and enjoyment in reading in comparison to females. This finding corresponds with results from the study by Logan et al. (2011), which found a stronger relationship between intrinsic motivation and reading scores among children labelled as poor readers in comparison to those labeled as good readers. It therefore appears that intrinsic motivation is correlated with reading performance among

low ability learners in particular, and that this finding may hold true across different age groups. Furthermore, among those readers who demonstrate poor fluency skills, intrinsic motivation is associated with being female. Therefore, males among the lowest ability group lack intrinsic reading motivation. Research indicates that children who display reading difficulties are likely to continue experiencing difficulties across their academic years (McCardle, Scarborough, & Catts, 2001). Elementary school-aged boys who lack adequate reading fluency skills may continue to experience reading deficits, and subsequently, may also display low levels of intrinsic motivation. The disparity in intrinsic motivation and reading fluency may persist into their adult years.

The relationship between fluency performance and intrinsic motivation may be reciprocal, so that poor fluency ability reduces levels of intrinsic reading motivation and low levels of intrinsic motivation inhibit reading fluency achievement. A question for future research regarding adult literacy programs may therefore be how to increase males' level of intrinsic motivation for reading activities. An increased interest in reading may simultaneously increase adult learners' engagement with reading materials, and subsequently, their fluency skills. Duncan (2009) conducted semi-structured interviews with a population of adult learners and found that many participants linked reading enjoyable books to improved reading performance. Higher interest and enjoyment levels may be associated with increased practice opportunities, which may contribute to improved fluency.

Alternatively, gender differences in intrinsic reading motivation may diminish as fluency skills improve over time. Another question for future research may concern how to increase fluency skills of low-literature adults. As mentioned previously, research

indicates that practice with oral reading is essential for the development of fluency skills. Reading interventions that increase fluency skills may simultaneously reduce gender discrepancies in intrinsic reading motivation among low literate learners. An individual who is not fluent with reading must exert attention towards decoding strategies, and as a result, their higher order reading abilities (i.e., comprehension) are compromised. As an individual's fluency with reading material increases, levels of intrinsic motivation (i.e., interest and enjoyment in reading) may also increase, as he or she attends less to lower order skills and more to higher order skills. Increased comprehension may contribute to increased intrinsic reading motivation, as the individual discovers the meaning of text and the types of text that he or she finds interesting and enjoyable. Therefore, the relationship between intrinsic motivation and reading fluency may be reciprocal, with improvements in one domain impacting the other. Future studies should further investigate this relationship in populations of adult learners.

Findings from the current study therefore demonstrate a relationship among reading performance (i.e., fluency), intrinsic reading motivation, and gender, with males who lack fluency skills reporting lower levels of intrinsic motivation than females. In addition, correlational results indicated that males' reported levels of intrinsic motivation have a significantly stronger effect on their reading performance in comparison to females'. Due to the fact that many individuals who attend ABE programs are likely to lack sufficient reading fluency skills, it is important that researchers and practitioners investigate methods for improving both intrinsic motivation and fluency, particularly for male students. This could be as simple as providing learners with a choice of text to read

in order to encourage individual interests and providing multiple opportunities for practicing fluency skills.

Another factor that may influence the relationship between intrinsic motivation and reading fluency is reading amount. According to Wigfield and Guthrie (1997), the relationship between intrinsic motivation and reading performance is mediated by frequency of reading behaviour (i.e., the amount of time an individual spends engaged with reading activities). Similarly, a study by Schaffner, Schiefele, and Ulferts (2013) found that reading amount mediated the relationship between intrinsic motivation and reading comprehension. Possibly, males and females with higher fluency scores spend an equal amount of time reading, which is why a gender difference in intrinsic motivation is not apparent between male and female participants. Males and females who display lower fluency scores, on the other hand, may differ in terms of the duration of their reading behaviour. For example, males with poor fluency skills may spend less time reading in comparison to females with poor fluency skills, thereby contributing to the gender disparity in reading motivation. As females with lower fluency skills continue to engage with reading materials, their fluency skills may increase, along with their levels of intrinsic reading motivation. Males with lower fluency skills, however, may be more likely to avoid reading tasks, which negatively effects their fluency and intrinsic reading motivation. Future research is required to investigate the role of reading amount on the relationship between intrinsic motivation and reading performance in populations of low literate adult learners.

Thematic analysis of the qualitative interviews did not correspond with quantitative findings, as themes related to intrinsic motivation were not reported in

interview transcripts of either female or male participants. The majority of participants in the current study did not use language representing the notion of intrinsic motivation. The exclusion of terms related to intrinsic motivation could be a result of the semi-structured interview questions, which did not specifically require participants to describe themes related to intrinsic motivation. For example, participants were not prompted to discuss their levels of interest or enjoyment in reading. Rather, they were asked to describe a positive and a negative experience with reading. The lack of apparent themes related to intrinsic motivation may be due to the generality of the interview questions and the fact that intrinsic motivation may not form part of participant's explicit narratives around reading.

Alternatively, it is possible that themes relating to intrinsic reading motivation (e.g., enjoyment, interest, or creativity related to reading) were not present in interview transcripts, because the majority of participants were simply not intrinsically motivated to read. When analyzing scores on the interest/enjoyment subscale of the IMI and the intrinsic motivation subscale of the RMS more closely, it appeared that on average, neither males or females scored very high on these measures. For example, the interest/enjoyment subscale consists of a five-point Likert-type scale, with a score of one representing the response, "not at all true of me", a score of three representing the response, "somewhat true of me", and a score of five representing the response, "completely true of me." Though the logistic regression output indicated that females were associated with intrinsic motivation, suggesting that females scored higher on measures of intrinsic motivation than males, a closer inspection of responses on these measures indicated that on average, females scored a 3.4 on the interest/enjoyment

subscale, and a 3.0 on the intrinsic motivation subscale. In other words, though a gender discrepancy in levels of intrinsic motivation was apparent, females were still not scoring very highly on these motivation measures. The exclusion of intrinsic motivation themes within the interview transcripts and the low average scores on the intrinsic motivation questionnaires may be due to the low fluency scores displayed by the participants. Adults attending literacy programs may lack the skills necessary for comprehending passages of text, making it less likely that these individuals would experience feelings of interest and enjoyment in reading. Of the three participants that discussed intrinsic motivation, these themes reflected an experience involving the act of reading a specific novel. Individuals who have not acquired the literacy skills necessary for reading and understanding a novel may lack intrinsic reading motivation. According to Keskin (2014), those who display reading difficulties often lack knowledge of appropriate reading strategies, and therefore do not find enjoyment in reading. The low level of reading skills displayed by the adult learners in the current population may be an indicator of why intrinsic motivation themes were not present within the qualitative data.

The finding that intrinsic motivation was not a common theme within participant interviews could be an indicator that intrinsic motivation is a concept formed by researchers that is of little relevance to the experiences of adult learners. If adult learners lack the fluency skills necessary to read passages of text, they may have failed to develop an intrinsic motivation to engage in reading behaviour. Rather, extrinsic motivation was an emergent theme.

Extrinsic motivation. Previous research findings suggest that intrinsic and extrinsic reading motivation are highly correlated constructs (Schaffner, Schiefele, &

Ulferts, 2013). Therefore, in order to avoid suppression effects, these constructs should be tested simultaneously (Schaffner, Schiefele, & Ulferts, 2013). Research has shown that when both intrinsic and extrinsic motivation are assessed as predictors of reading performance, intrinsic motivation is strongly and positively correlated with children's reading comprehension, whereas extrinsic motivation is strongly and negatively correlated with reading comprehension (Wang & Guthrie, 2004). Future research concerning adults' reading motivation should study the effects of both intrinsic and extrinsic reading motivation on reading achievement.

Thematic analysis indicated that extrinsic motivation was a common theme discussed by adult learners. This corresponds with findings from a study by Duncan (2009), which involved qualitative analysis of interview transcripts from a population of adult learners. Findings from this study indicated that external desires to engage in reading, such as to obtain employment and to be able to read to children, was a common theme across participants. Learners who decide to participate in an adult literacy program likely do so for extrinsic reasons, such as to obtain a job or finish their education. Although previous research pertaining to children's reading motivation has indicated that intrinsic motivation contributes significantly more to reading performance in comparison to extrinsic motivation (Wang & Guthrie, 2004), this finding may not hold true in the adult population. In fact, the opposite may be true, in that extrinsic motivation plays a larger role in determining reading performance in comparison to intrinsic motivation. Those adults who attend an ABE may do so for specific reasons involving extrinsic rewards. According to Bye, Pushkar, and Conway (2007), both intrinsic and extrinsic motivation contribute to students' engagement in learning opportunities. Future studies

pertaining to adult learners' reading motivation should include an empirical measure of extrinsic reading motivation in order to investigate differences across measures of both intrinsic and extrinsic constructs.

In addition, past research has shown that extrinsic motivation negatively impacts children's reading achievement. However, possibly this finding does not hold true in a population of adult learners. The relationship between extrinsic motivation and reading performance present in elementary school-aged children may change over time due to experiential and developmental differences. An investigation of the role of extrinsic motivation on the relationship between gender and reading performance may provide further insight into the unique motivation profiles of this population of learners.

Moreover, thematic analysis revealed that male participants described themes related to extrinsic reading motivation more often than female participants. Possibly a gender gap exists in levels of extrinsic motivation. Males and females may differ not only in their reported levels of reading motivation, but also in terms of the orientation of their reading motivation. Females may be associated with higher intrinsic reading motivation, whereas males may be associated with higher extrinsic reading motivation. Future research is required to investigate the relationship between gender and extrinsic motivation in adult populations.

Self-efficacy and reading performance across gender. The gender disparity in perception of reading self-efficacy that has been shown to exist in elementary-school aged children was not replicated with the current population. Both male and female participants reported a similar level of reading self-efficacy, and these efficacy perceptions equally influenced their reading performance. Specifically, both male and

female learners displayed significant positive correlations between scores on the self-efficacy questionnaire and scores on reading tests, suggesting that perceptions of reading ability were important indicators of reading achievement across gender. Although males displayed slightly stronger correlations between the two variables, this difference was non-significant. Thus, although researchers have found a significant gender difference in the relationship between efficacy perceptions and reading performance among children, this finding was not present in the current population of low-literate adults. Thematic analysis of the interview transcripts supported the quantitative results, as both male and female learners were equally likely to discuss themes related to perceptions of reading self-efficacy.

An important question for future research may concern why the gender gap in reading self-efficacy that is present in childhood diminishes in adulthood. Perhaps adults' efficacy perceptions are less influenced by gender stereotypes in comparison to children's. Research pertaining to children's efficacy perceptions demonstrates that boys display higher competency beliefs in masculinized subject domains (i.e., math and science), whereas girls display higher competency beliefs in domains that are typically feminized (i.e., language arts) (Meece, Glienke, & Burge, 2006). This did not hold true in the present study, as mean comparison analysis demonstrated that the difference in average self-efficacy scores across gender was non-significant. Therefore, male and female participants reported similar levels of reading self-efficacy. Future research could investigate the impact of gender stereotypes on efficacy perceptions in the adult population.

Another reason for the difference in the relationship between gender and self-efficacy across age may be a result of the different learning contexts that surround children versus adult learners. For example, research indicates that girls report more positive social feedback than boys (Lynch, 2002). This gender discrepancy in social feedback among school-aged children may contribute to differences in reading efficacy beliefs. For children, a context exists surrounding self-efficacy in the form of both positive and negative social feedback (e.g., teacher praise, test scores, etc.), whereas adult learners have been removed from this context for many years. According to Gorges and Kandler (2012), adults are less influenced by social agents than children, as their psychological and educational development is already complete, and their values and self-concepts have already been established. This finding may explain why reading self-efficacy perceptions did not differ across gender in the current population.

Research indicates that elementary school-aged girls perform better on literacy tasks in comparison to boys. This difference may be, in part, attributed to the fact that girls also report receiving more positive feedback. Girls perform better on reading tasks, and as a result, may receive greater teacher and parent praise and recognition in comparison to boys. Subsequently, this social reinforcement may increase girls' efficacy beliefs towards reading tasks, as well as their future reading performance, and simultaneously inhibit boys' efficacy beliefs and future reading performance. Adult learners, on the other hand, have most likely been removed from the learning environment for many years. Consequently, may be the context surrounding adult learners' self-efficacy perceptions in the form of feedback from others is limited. Therefore, both male and female adult learners may lack recent experience with social

feedback in an educational environment, thereby reducing discrepancies in reading efficacy beliefs. This possible explanation is why findings from the current study did not display a gender discrepancy in self-efficacy scores. Future research is needed to confirm the finding that a gender gap in reading self-efficacy does not exist in populations of low-literate adults.

Negative performance motivation. Results of the logistic regression model also demonstrated that higher scores on the pressure/tension subtest of the IMI and the perceived difficulty subtest of the RMS were associated with being female. In other words, females reported experiencing more negative emotions and more difficulties with reading tasks in comparison to males. Perhaps this finding explains that lower decoding scores were also associated with being female. Research has shown that negative affect and higher levels of perceived difficulty are associated with lower performance outcomes (Fulmer et al., 2013, Li, Lee, & Solmon, 2007; Wigfield & Eccles, 2002). Possibly females in the current population engage less often with reading materials due to higher reported levels of perceived difficulty as well as more negative emotions associated with reading, which may subsequently impede their development of decoding skills.

Results of the thematic analysis indicated that themes of negative performance motivation were discussed equally across gender. When asked about a negative experience with reading, both males and females described difficulties with reading tasks (i.e., the inability to pronounce words or understand text). Therefore, although quantitative results indicated that higher levels of negative performance motivation were associated with being female, qualitative analysis did not support this finding, as themes related to this construct were described equally across gender. Possibly a gender

difference in negative performance motivation would be found within the qualitative data if thematic analysis involved a larger sample of interview transcripts. A future study should conduct thematic analysis with the entire set of interview transcripts in order to develop a better understanding of reported motivation themes within this population.

Deductive thematic analysis. Initially, codes related to each predictor variable (i.e., reading fluency, intrinsic reading motivation, and negative performance motivation) were applied to the qualitative data. Interestingly, participants did not use vocabulary related to reading fluency, such as accuracy or speed. As a result, this code was removed from further analysis. Rather, many participants shared positive efficacy perceptions relating to improvements in their overall reading abilities. As a result, an additional code labelled, “reading self-efficacy” was added and applied to the data. An important note is that when discussing positive experiences with reading, participants did not discuss levels of speed or accuracy, but rather discussed improvements in overall reading ability. In addition, when asked to discuss a negative experience with reading, participants often described difficulties with pronunciation, which relates to decoding skills, and comprehension. Based on participant reports, decoding and comprehension abilities seem to impact competency beliefs and difficulty perceptions, rather than fluency. In other words, low-literate adults may be less concerned with improving the speed at which they read, and more concerned with their ability to pronounce words and understand text. Although research indicates that fluency is an essential prerequisite for higher-order reading skills, this finding was not articulated by the adult learners. Rather, decoding and comprehension abilities may exert a stronger influence on adult learners’ overall reading motivation.

Inductive thematic analysis. Results of the inductive thematic analysis displayed several interesting findings. First, thematic analysis across gender revealed that males reported themes related to extrinsic reading motivation substantially more often than females. This finding suggests that males may engage in reading tasks, such as attending an adult literacy program, in order to achieve a specific external reward (e.g., a better job or high school diploma), rather than for internal outcomes. Research indicates that individuals differ in terms of both their level of motivation and orientation of motivation (Logan et al., 2011). While females may report higher levels of intrinsic motivation, males may report higher levels of extrinsic reading motivation. This finding highlights the fact that there may be different methods for increasing males' level of reading motivation (i.e., through providing high-interest reading materials to increase intrinsic motivation or through delivering rewards to increase extrinsic motivation). Educators and researchers should therefore seek to understand the specific types of extrinsic motivation that adult males report in order to promote successful teaching. For example, rather than focus solely on reading novels, an adult literacy program may also incorporate more practical tasks, such as reading and filling out job applications. These programs may benefit from advertising such tasks in order to increase participation of male learners.

Research conducted with children and adolescents has indicated that extrinsic reading motivation impedes reading development. This finding may or may not hold true in populations of adult learners. Possibly, due to differences in developmental and experiential variables between school aged children and adults, extrinsic motivation may be positively associated with adults' reading performance. Further research is required to

investigate the role of extrinsic reading motivation on adult learners' reading performance.

Another emergent theme within the qualitative data was negative social feedback. When asked to discuss a negative experience with reading, multiple participants described past school experiences in which they received negative feedback from teachers and peers. This experience often involved a participant being required to read out loud in front of the class, resulting in undesirable attention from others. These recollections may represent an additional motivation construct influencing adult learners' reading achievement that has not received much attention in the current literature. According to Gorges and Kandler (2012), previous school experiences impact adults' motivation for learning tasks. Pillemer (2001) assessed the functions of vivid memories, and found that these salient memories can continue to influence an individual's behaviours, attitudes, and beliefs for many years after the original event. Based on inductive analysis of the interview transcripts, it appears that for many adult learners, oral reading tasks represent a negative personal event memory, which may have affected their reading motivation and reading performance across their academic years. Pillemer (2001) also illustrated how a single negative event can actively affect future behaviour, as the individual attempts to avoid similar experiences. It is possible that negative social feedback may cause individuals to avoid future reading tasks, thereby impeding their reading development. Future research should investigate the role of social feedback and past school experiences on the reading motivation of adults (i.e., their willingness to attend an adult literacy program). Negative past school experiences in the form of

negative attention from others may exert a strong influence on an individual's learning motivation across time.

In addition, early research indicates that positive performance feedback is associated with higher levels of intrinsic motivation, whereas negative performance feedback is associated with lower levels of intrinsic motivation (Ryan & Deci, 2000). Future research should therefore also investigate the influence of positive and negative social feedback on levels of intrinsic reading motivation in adult populations.

The finding that many participants associate social feedback with negative reading experiences may also be a result of how educators teach oral reading skills in the classroom. Research indicates that in order for students to achieve reading fluency, the classroom environment must provide sufficient opportunities for students to practice their oral reading skills (Archer et al., 2003). This practice can be accomplished through a variety of tactics, including guided oral reading, choral reading, and partner reading (Archer et al., 2003). Although research indicates that practice with oral reading skills is essential for the development of reading fluency, thematic analysis of the interview transcripts revealed that many of the participants described negative experiences in which they had received negative social feedback while reading in front of the class. As a result, it is important that teachers provide opportunities for oral reading practice while minimizing the risk of negative feedback from others, as this negatively may impact an individual's reading achievement by discouraging them from engaging in future reading behaviours. Based on findings from the current study, it is recommended that teachers implement other methods of oral reading practice within the classroom, such as partner reading, which would reduce the risk of undesirable attention from multiple peers.

Research has found that partner reading is successful in improving reading skills across a variety of students, including those persons who struggle with reading (Bryan et al., 2000). In addition, teachers should develop a classroom environment that includes positive reinforcement so that students are encouraged to support one another. Positive social feedback may greatly assist with improving the literacy skills of those who struggle with reading.

Experiences with receiving negative social feedback may impact multiple reading motivation constructs (e.g., self-efficacy and intrinsic motivation) and overall reading achievement. It is therefore important that future research investigates the effects of social feedback on the reading performance of both children and adult learners.

Integration of quantitative and qualitative results. The quantitative analysis informed the basis for the analysis of qualitative data in the current study. The integration of self-report measures and semi-structured interviews was successful, in that it revealed several emergent themes (e.g., extrinsic reading motivation) that would not have been discovered with the use of quantitative analysis alone. Thematic analysis of the interview transcripts supplemented the quantitative analysis by revealing motivational themes that were not captured by standardized self-report measures and that may be unique to this population of struggling adult readers. However, the integration of the two measurement techniques was also unsuccessful, as the finding that intrinsic motivation was associated with being female was not replicated in thematic analysis of the interviews. In other words, although females reported higher levels of intrinsic motivation on questionnaires, they did not express themes of intrinsic motivation in their narratives surrounding reading experiences. Therefore, although thematic analysis allowed for further insight into the

motivation profiles of these adult learners by revealing emergent themes from individual experiences with reading, the results failed to replicate the quantitative findings in some cases.

In addition, it is important to note that reading self-efficacy was another emergent theme within the qualitative data. Although self-efficacy was removed from the quantitative models, it re-emerged in the inductive thematic analysis as an important motivation factor. Although gender disparities in levels of reading self-efficacy were not found in the current population, the theme was commonly noted within participant narratives, suggesting that it may play an important role in the reading motivation profiles of both male and female adult learners.

Future Directions

The current research study addresses the need for more research in the area of adult literacy concerning the relationship between reading performance and reading motivation. Researchers interested in the reading motivation profiles of adults are forced to rely on research based on the child population. Therefore, the current study investigated the relationship between reading motivation constructs and reading performance in a sample of low literate adults. A logistic regression model indicated several reading performance and reading motivation variables that significantly predicted gender. One interesting finding was the relationship among intrinsic motivation, reading fluency, and gender. Intrinsic motivation was associated with being female only among participants who displayed low fluency scores. Among those who displayed higher fluency scores, a relationship between intrinsic motivation and gender failed to exist. In other words, intrinsic motivation was found to be lacking in males with poor fluency

skills. In addition, preliminary mean comparison analyses displayed an apparent gender difference in reading patterns, with males reading significantly more informational texts and females reading significantly more recipes and novels. Moreover, thematic analysis of qualitative interviews highlighted emergent themes that quantitative analysis failed to measure. In particular, extrinsic motivation was an emergent theme that was described substantially more often in interviews of male participants in comparison to those of female participants. The current study therefore suggests that gender discrepancies in reading performance, reading motivation, and reading behaviours exist among low-literate adults. Further investigation of the motivation factors that may influence male and female adult learners' reading achievement is therefore warranted. It is essential for researchers to continue to investigate the unique motivation profiles of this population of learners in order to promote increased reading skills in adults. Of specific concern is the lack of intrinsic motivation reported by males who scored the lowest on fluency tasks. Future research should further investigate the direct and indirect effects of both intrinsic and extrinsic reading motivation on adult learners' reading achievement.

Confusion between motivation constructs. Due to the confusion between motivation constructs within the existing literature, readers have difficulty comparing findings across studies and discriminating between constructs, as many terms are used interchangeably. It is essential that future research studies include operational definitions of motivation variables in order to reduce this confusion. According to Ahl (2006), motivation is difficult to identify and measure, as it is a mentalistic term representing inner processes, rather than observable behaviour. It may not be realistic to analyse reading motivation solely based on observable behaviour. For example, an observable

measure of intrinsic motivation may be how often an individual engages with reading material in his or her free time. It is unrealistic, however, to observe an individual in order to determine the amount of time he or she spends engaged in reading activities. Therefore, researchers rely on subjective reports of reading behaviour and reading motivation. Operational definitions that include clear and specific criteria (i.e., inclusions and exclusions) that correspond with questions on motivation measures would help to reduce the confusion between motivation variables. Also, researchers and readers should be able to clearly distinguish between subscales of motivation questionnaires. Going forward, it is crucial that researchers clearly define motivation variables, as well as implement questionnaires that represent measures of genuine motivation constructs.

Limitations of the current study. The current study failed to incorporate an empirical measure of extrinsic reading motivation, which may play a role in adult learners' willingness to participate in an adult literacy program. Though research investigating children's reading motivation has indicated that extrinsic motivation impedes reading performance, this may or may not hold true for a population of adult learners. In addition, males and females may differ in terms of the orientation of their reading motivation. For example, while females may be more intrinsically motivated to read, males may be extrinsically motivated to read. Future research should seek to investigate the role of extrinsic motivation on the reading performance of low literate adults by implementing an empirical measurement tool. For example, the Reading Motivation Questionnaire (RMQ) developed by Schaffner and Schiefele (2007) requires the participant to respond to various items on a 4-point Likert-type scale, and captures five major dimensions of reading motivation, including object-oriented, experience-

oriented, competence-oriented, competition-oriented, and social-oriented motivation constructs, which can be presented by two higher-order reading motivation constructs (i.e., intrinsic and extrinsic motivation). Future studies investigating adult learners' reading motivation should include an empirical measure of both intrinsic and extrinsic motivation.

The current study focused on the relationship between reading motivation and lower order reading skills (i.e., decoding and fluency). Further research is required to investigate the relationship between reading motivation and higher order reading abilities, such as comprehension. It is possible that motivation constructs produce differential effects across lower versus higher levels of reading ability.

In addition, it is important to note that participants involved in the current study scored between a grade three and grade eight level on the TABE. Findings from the current study therefore cannot be generalized to those adult learners who score lower than a grade three level or higher than a grade eight level. It is possible that the dynamics between reading performance and reading motivation measures differ across skill level. For example, the correlations between reading performance and reading motivation may be nonsignificant, or may differ in terms of the direction of the associations. Future research involving adult learners could analyze a population with a larger range of skill level, and could compare reading motivation across different ability groups.

Thematic analysis of qualitative interviews allowed for further insight into the motivation profiles of this population of low-literate adults. Future research should incorporate methods of both quantitative and qualitative analysis in order to provide context for quantitative results, and to investigate emergent themes, which empirical

measures of reading motivation may fail to test. The current study required participants to respond to two general questions (i.e., a positive and a negative experience with reading). In the future, interview questions should be designed to better reflect the empirical measures (i.e., specific motivation constructs). It is possible that themes related to certain motivation constructs were not discussed by participants due to the limited number of qualitative interview transcripts that were analyzed, as well as the open-ended style of interview questions that were implemented. Duncan (2009) implemented semi-structured interviews with 37 participants enrolled in an adult literacy program that involved open-ended questions followed by pre-determined question prompts to elicit responses pertaining to specific reading components. This qualitative procedure maximized participants' ideas related to reading, while also ensuring all relevant themes were discussed using the least amount of prompting necessary. In order to improve qualitative analysis of the current study, a wider range of open-ended questions relating to reading components (e.g., decoding, intrinsic motivation, extrinsic motivation, etc.) could have been presented to the participants followed by minimal, pre-designed prompts. For example, in order to test for intrinsic motivation, one interview question could be, "Do you enjoy reading? Why or why not?" Alternatively, participants might be asked, "Why did you decide to participate in this adult literacy program?" This question would probe for answers related to intrinsic or extrinsic reading motivation (i.e., subjective reasons behind an individual's decision to participate in a literacy class). In this way, the qualitative data may better reflect and support the quantitative findings. In addition, the current study focused on a select few interview transcripts (i.e., 24). Future studies should

seek to compare themes across a wider range of qualitative data in order to provide stronger evidence of gender differences across themes.

Lastly, future research should attempt to apply findings related to adults' reading motivation to the classroom setting. A strategy for increasing males' level of intrinsic motivation may be to provide a variety of different reading materials and to provide a choice of reading material. A strategy for increasing reading self-efficacy of male and female students may be to guide them in choosing short term and long term reading goals that are appropriate for their current skill levels. Future studies should test the effectiveness of such strategies using repeated measures designs.

Social Significance

The current study is socially significant, because low literacy has numerous negative effects at both the personal and societal levels. Furthermore, children report that family members, especially mothers, influence their reading motivation (Edmunds and Bauserman, 2006). A study by Lynch (2002) found that mothers' self-efficacy beliefs concerning their ability to improve their child's reading performance was significantly and positively correlated to their children's level of reading self-efficacy. This finding indicates that the more competent mothers felt in teaching their child to read, the more positive beliefs children had about their reading ability. Therefore, parents' reading behaviours and competency levels have a strong impact on their children's reading development. These findings further support the need for more research in the area of adults' reading motivation and reading achievement, as promoting reading development in the adult population will also have an impact on the next generation of readers.

Conclusion

According to Sutton and Glascoe (2006), at least one in every five children experiences reading difficulties. Moreover, research indicates that students who display reading deficits in first grade will continue to struggle with reading throughout their elementary school career, suggesting that early reading performance predicts later reading achievement (Compton, 2000). According to McCardle, Scarborough, and Catts (2001), as many as 65 to 75 percent of children who display reading difficulties in the first three years of elementary school will continue to experience difficulties throughout their academic years. These students often fail to acquire average level reading skills by the end of elementary school (Torgesen, 2002). Reading deficits are associated with numerous negative consequences, including lack of vocabulary and comprehension skills, as well as decreased motivation for academic tasks (Torgesen, 2002). Learning largely relies on an individual's ability to read text, and therefore low literacy negatively impacts an individual's overall academic achievement (Schiefele et al., 2012). Poor reading skills continue to negatively impact an individual after his or her schooling years are over. According to Archer, Gleason, and Vachon (2003), students who are unable to decode multisyllabic words are more likely to drop out of school, have difficulty obtaining employment, and experience social and emotional conflict as adults. Research pertaining to children with reading deficits therefore indicates that early and intensive intervention may be the key to improving reading performance and reading motivation of those who struggle with reading. Torgesen (2002) suggests the only way to reduce the number of children with reading difficulties is through early identification of reading deficits and early intervention. However, for adult learners who have already experienced years of

reading difficulties, the question becomes, how do we motivate these individuals to improve their reading skills? With demands for literacy skills in the workplace increasing, it is even more important to increase the reading motivation and reading performance of low literate adults. The current study provided some insight into the motivation profiles of male and female adult learners. Future research is required to continue to investigate ways to motivate these adults to participate and persist in ABE programs, and ultimately to reduce the prevalence of low literacy in today's society.

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